THE SCERTS MODEL:
AN EXPLORATION OF EDUCATIONAL PSYCHOLOGY PRACTICE

by

Roseanna Knight

Volume One:
A thesis submitted to the
University of Birmingham
for the degree of
Applied Educational and Child Psychology Doctorate

School of Education
College of Social Sciences
University of Birmingham
July 2019

ABSTRACT

The SCERTS model is a comprehensive educational assessment and intervention approach for children and young people with autism. The name ‘SCERTS’ is derived from three domains of the approach: social communication, emotional regulation, and transactional support. The approach is designed to encourage collaboration during both assessment and intervention, working together towards shared child-centred outcomes. Current research focuses predominantly on the efficacy of the approach, however, there is a gap in understanding the use of the approach in practice. Whilst an intervention may be effective in theory, for it to be effective in practice it must also be functional within the working environment.

A pragmatic, mixed-methods approach was used to explore the use of the SCERTS model in an educational psychology service, examining the strengths and limitations of the approach, and the impact on practice. Questionnaires gathered information predominantly regarding the use of the approach. Focus groups gathered information regarding the use and impact of the approach on educational psychology practice. Descriptive and thematic analyses were used to interrogate the data, with key themes emerging relating to benefits and barriers to practice. The research concludes with recommendations to reduce the impact of the barriers raised and implications for educational psychology practice.

DEDICATON

This thesis is dedicated to
my parents, Sam and Evelyne,
my brother, Harry,
and my husband, Mitchell.

Thank you for your endless support,
encouragement, and patience.

Thank you for
getting me through the challenges I have faced
and for always believing in me.

ACKNOWLEDGEMENTS

Thank you to Dr Julia Howe, tutor at the University of Birmingham, for your encouragement, advice, support, and understanding throughout this Doctorate. Thank you for guiding me through my thesis and offering feedback and support.

Thank you to Dr Melanie Shirley for your support and advice regarding the SCERTS model and the time you gave me to support the development of this thesis.

Thank you to my placement supervisors over the course of this Doctorate, all of whom provided advice and guidance towards my thesis as well as my professional development.

Thank you to all the EPs who took part in this research, and to the principal educational psychologist who accepted my interest in the research topic without question and facilitated the research in the service.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER ONE

INTRODUCTION

1.1 Structure of Volume One of the Thesis

Chapter one presents the context of the thesis in relation to my background and experience. The subject of the research, the SCERTS model, will then be introduced, and the aims and rationale of the volume will be described.

Chapter two presents literature relating to educational psychology practice, assessment and intervention approaches for autism and the associated barriers in practice, and the SCERTS model. Extant research is summarised, and the aims of the thesis are introduced.

Chapter three presents the methodology of the research. The conceptual orientation and research paradigms are explored before presenting the research design and method. Ethical considerations are discussed and the analysis methods are introduced.

Chapter four sets out the results of the two parts of the research.

Chapter five discusses the results of the research, presenting the key themes and findings of the research. The methodological choices are considered and reflected upon, along with the limitations of the research.

Chapter six concludes the volume, presenting key implications for educational psychology practice and the next steps emerging from the research. Finally, suggestions for future research, as a result of the findings of this study, are made.

1.2 Context of the Thesis

1.2.1 Research as a Trainee Educational Psychologist

As part of the Applied Educational and Child Psychology Doctorate at the University of Birmingham, a thesis, comprising of two volumes, is required, alongside 300 placement days within an Educational Psychology Service (EPS). The current volume (volume one) of the thesis involves an original empirical research study, and volume two is comprised of four professional practice reports reporting on educational psychology practice.

1.2.2 Professional Background

The subject of this volume developed from my longstanding interest in autism and supporting related needs. This interest in autism initially developed during work experience in an enhanced provision attached to a mainstream school designed to meet the needs of children with social communication needs. I then worked for a service dedicated to adults with Asperger's syndrome, seeking diagnostic assessment and/or post-diagnosis support. Later, whilst working in an NHS Child and Adolescent Mental Health Service (CAMHS), I worked within a neurodevelopmental service. The neurodevelopmental service provided a service to children, young people, and families, across the county, exploring a diagnosis of autism. However, support from the service following an autism diagnosis was limited – difficulties presented often did not appear to meet the threshold for tier 3 CAMHS support.

As I moved on to the role of a trainee educational psychologist, my interest in supporting the needs of children with autism also developed further. Being based in a community setting, rather than the previous clinical setting, brought different challenges and opportunities for supporting this population, and alternative models of support were explored, including the SCERTS model.

1.3 Introduction to the SCERTS Model

The SCERTS model (Prizant, Wetherby, Rubin, Laurent & Rydell, 2006) is a comprehensive educational assessment and intervention approach for children with autism spectrum disorders (ASD). The name 'SCERTS' is derived from the three core domains of the approach (Prizant, Wetherby, Rubin & Laurent, 2007):

"**Social Communication:** *the development of spontaneous, functional communication, emotional expression, and secure and trusting relationships with children and adults;"*

"Emotional Regulation*: the development of the ability to maintain a well-regulated emotional state to cope with everyday stress, and to be most available for learning and interacting;"*

"Transactional Support*: the development and implementation of supports to help partners respond to the child's needs and interests, modify and adapt the environment, and provide tools to enhance learning (e.g. picture communication, written schedules, and sensory supports)."*

The model provides a systematic structure for comprehensively assessing the strengths and needs of the child and their support, based on the three key areas.

As a result of the assessment, goals and objectives are chosen based on the child's developmental stage and priorities of functional skills for the individual.

The approach is a lifespan model, meaning it can be used at any age and at any developmental level. It can be used with children who are unable to communicate verbally, as well as with young people with more advanced levels of verbal communication. The model uses three key communicative stages to describe language development: 'social partner' (pre-verbal), 'language partner' (early stages of verbal communication), and 'conversational partner' (more developed verbal communication).

The approach can be adapted to use in any setting, such as school, nursery, home, or other community environments. It can be used as the full assessment (SCERTS Assessment Process – SAP) or used in alternative ways, such as SCERTS in Action (SIA) – an abridged version of the full assessment – or elements of the approach can be used independently, for example, using individual questionnaires to guide information gathering. Uniquely, the model can incorporate other approaches which may also be used with the child, such as Pivotal Response Treatment, TEACCH (Treatment and Education of Autistic and Communication related handicapped CHildren), Social Stories, and others (Prizant et al., 2006; Koegel et al., 1999; Mesibov, Shea & Schopler, 2005; Gray, 2015).

The SCERTS approach is designed to support multidisciplinary and family collaboration, working together towards shared child-centred outcomes as determined through assessment and regular reviews. The assessment is usually led by professionals such as educational psychologists, speech and language therapists, occupational therapists, or social workers, however, parents, carers,

teaching staff, and other adults working closely with the child, are a key part of the assessment and review process.

The model supports the lifestyle and culture of the family and can be adapted to meet the needs of the wider systems. Individual differences of the child's learning, interests, and motivators are central to the psychology behind the SCERTS model, ensuring the child is engaged in meaningful, purposeful, and enjoyable activities throughout the day. The support is used consistently across 'social partners' (people whom the child interacts with), activities, and environments, and progress is systematically charted over time (Prizant, Wetherby, Rubin & Laurent, 2007) adhering to an assess-plan-do-review approach.

See Chapter 2, section 2.8 for more information regarding the SCERTS model, and appendix 1 for examples of SCERTS tools.

Language Use

Throughout this thesis, the phrases 'the SCERTS model', 'the SCERTS approach' and 'SCERTS' are used interchangeably. In addition, due to the various perspectives held regarding the label 'autism spectrum disorder' (ICD-11, 2018), the term 'autism' will be used throughout the remainder of this thesis (Kenny et al., 2016). This also includes the terms 'autism spectrum condition' and 'Asperger syndrome'.

1.4 Rationale and Aims of the Research

During my first year as a trainee educational psychologist, my placement EPS invested heavily in training a large number of qualified, trainee, and assistant educational psychologists in the SCERTS approach (Prizant, Wetherby, Rubin, Laurent & Rydell, 2006). This appeared to be a valuable model for supporting the needs of children and young people with autism, in the school and community environment, without relying on pressurised clinical services. The approach has a strong theoretical evidence base and an emerging research evidence base (Prizant et al., 2006; Wetherby et al., 2014; Yu & Zhu, 2018; Morgan et al., 2018; O'Neill et al., 2010; Odom et al., 2010; Limbert, 2017). However, no research currently exists exploring the practicalities of the approach in educational psychology practice. Whilst the approach may be effective in theory, for it to be effective in practice it must also be functional in the working environment. In addition, given the substantial investment in the approach by the placement provider and other local authority services, as well as potential future investment by other services, it is important to explore the extent of the use of the approach following training, along with understanding the worth of the investment.

This volume of research explores the practical implications of the SCERTS approach in an EPS. Questions such as how the model has been used following training, who the approach has been used with, and in what contexts, will be explored. Impacts on practice will also be examined, along with the practical benefits and limitations of the approach in educational psychology working. Any emerging limitations will be discussed and suggestions for minimising the impact of these will be presented.

CHAPTER TWO

LITERATURE REVIEW

2.1. Overview of Chapter Two

This chapter begins by presenting an overview of Educational Psychology Service (EPS) delivery. This is to place the SCERTS model in context within the service as the focus of this research. A definition of autism is offered, then relevant literature from the following areas are presented and discussed: assessment and intervention approaches in educational psychologist (EP) practice and beyond; barriers to effective assessment and intervention; and the SCERTS model. The chapter concludes by identifying the gap in current literature and presents the research questions for this thesis.

2.2. Context for Educational Psychology Service Delivery

In the UK, a key transformation in the delivery of EPSs occurred in 1981 as a direct result of the Education Act (1981). In this Act, children with special educational needs became legally entitled to suitable education for their needs. This included the adaptation of mainstream provision to meet the individual requirements of children with special educational needs, promoting the place of inclusion. This legislation developed from the Warnock report (DES, 1978, p.21), which stated, *"The special educational needs of a maladjusted child should be assessed by an educational psychologist or child guidance team."* As a result of the Education Act (1981), EPs adopted a statutory role within their wider practice. From 1981, EPs were required by the government to provide psychological advice as part of a formal assessment contributing to a 'Statement of special educational needs'. A 'Statement' was a document setting out a child's special educational needs and the

provision required to meet these needs, now known as an Education, Health and Care Plan (EHCP – updated in response to the Children and Families Act 2014).

In 2000, the first review of educational psychology services in over 30 years highlighted an interest from service users in a wide range of services that could be offered by an EPS (DfEE, 2000). This included statutory work and a variety of other types of work already being offered through local authority funding, such as individual case work, family work, consultative work, and organisational level work. A subsequent review by Farrell et al. (2006) corroborated this finding. These reviews suggested that while EPs spend a large amount of time involved in statutory assessment work, other types of work offered by EPs were highly valued and desired by service users.

In 2010 the Coalition Government commissioned a spending review, requiring significant reductions in local authority funding across the UK in order to reduce the financial deficit (HM Treasury, 2010). As a direct result of this, many public services shifted from local authority funded to traded, in an attempt to keep services operating effectively. EPSs were no different and many developed a traded model of service delivery to evolve with the economic challenges (AEP, 2011; Allen & Hardy, 2013). This enabled some services to continue to function effectively and EP jobs to be secured (Islam, 2013). However, some EPSs continue to operate pre-existing models of service delivery, based solely on local authority funding, and others evolved further, becoming fully privatised.

The EPS involved in this research developed into a traded service shortly after the 2010 review. Whilst creating a traded service within the public sector was controversial, it was seen to be necessary for the service to survive. In this model,

income is generated from educational settings purchasing EP time and expertise (AEP, 2011). In addition, other services, such as youth justice, autism services, and other local authority services, could purchase EP time, creating service level agreements (Wolfendale et al., 1992). Fallon, Woods & Rooney (2010) suggested that the shift to a traded model may increase the range of services available from an EPS, including a growth in EP specialisms, in order to promote the service and generate greater income. In the service at the centre of this research this is exactly what occurred. This EPS dedicates approximately half the EPs' time to statutory work, whilst also offering a wide range of other services to educational settings, supporting children and young people between the ages 0-25 years. Additionally, there are a number of service level agreements with other services and emerging specialisms, expanding the range of work offered by EPs in the service. Of particular note to this research, this includes a service level agreement to support an autism assessment pathway. The service also employs an EP specialising in autism.

2.3. The Literature Search Strategy

The databases and terms used in the literature search are presented in table 2.1. The search terms were selected following the production of a mind map of the areas of literature relevant to the research topic. These are presented in figure 2.0. The term 'SCERTS' did not require further refinement due to the smaller volume of literature in this area.

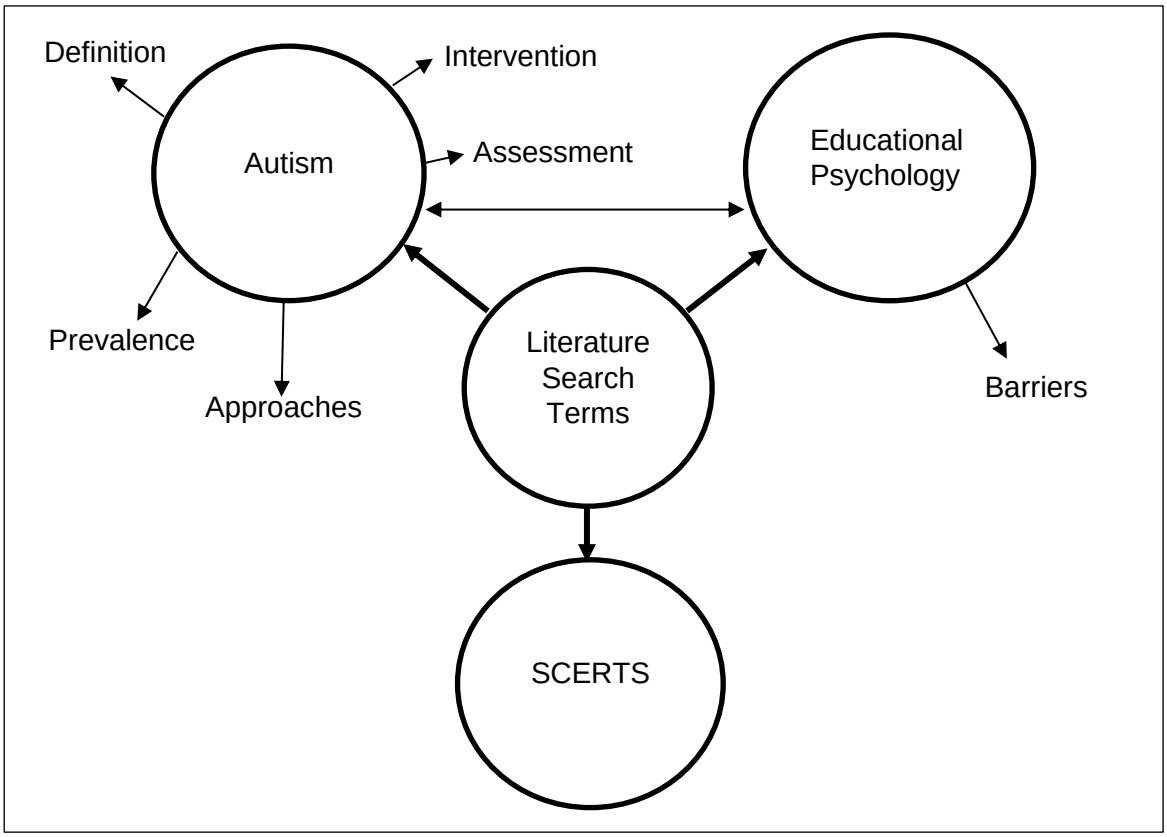


Figure 2.0. Mind map of search terms

The National Autistic Society Library Catalogue was also used in searching literature regarding autism and ProQuest Ebook Central was also used to further the literature search. The SCERTS Model manuals (Prizant et al., 2006) were used as an additional source for further literature relating to autism, assessment and intervention approaches, and the development of the SCERTS model.

The searches were restricted to those available to the University of Birmingham or Open Access. Searches were also restricted to research written in, or translated to, English. These criteria may result in research relating to SCERTS being excluded as the SCERTS model is used across the world. It is essential to acknowledge that there have been publications relating to the SCERTS model in China, Japan, Korea, and Spain. However, these are published in the native language only, therefore cannot be accessed by the researcher.

Databases used	Terms used in searches
➢ PsychInfo ➢ ERIC ➢ Taylor and Francis ➢ Psych Articles ➢ Scopus ➢ Wiley ➢ Find It (University of Birmingham) ➢ National Autistic Society Database ➢ Google Scholar	The searches were conducted using the terms: 'ASD', 'ASC', and 'Asperger Syndrome', in addition to the term 'autism'. ➢ Autism definition ➢ Autism prevalence ➢ Autism approaches ➢ Autism assessment(s) ➢ Autism intervention(s) ➢ Autism AND educational psychology ➢ Educational psychology barriers ➢ SCERTS

Table 2.1. Databases and terms used in the literature search.

Titles were assessed for relevance to the current research. Appropriate literature was examined further for relevance. This was achieved through reading the abstract of journal articles and the introduction to book chapters. In addition, a snowball technique was used to follow relevant references from the literature to ensure a thorough search of all current literature regarding the SCERTS model and other relevant areas (Ridely, 2008).

2.4. Autism: Definitions and Prevalence

2.4.1. A Definition of Autism

The International Classification of Diseases – 11th Revision (ICD-11) (World Health Organisation, 2018) is the latest diagnostic manual used globally to identify health

needs, released in June 2018 and due for formal adoption in January 2022. The ICD-11 describes ‘autism spectrum disorder’ as:

> “...characterised by persistent deficits in the ability to initiate and to sustain reciprocal social interaction and social communication, and by a range of restricted, repetitive, and inflexible patterns of behaviour and interests. The onset of the disorder occurs during the developmental period, typically in early childhood, but symptoms may not become fully manifest until later, when social demands exceed limited capacities.” (ICD-11, 2018)

The description states that the pervasive developmental difficulties must impact daily life across settings, although also acknowledges there may be contextual differences. There are several subtypes of autism as defined in the ICD-11 that are outlined in appendix 2, accounting for the wide variety of cognitive and language skills found across the autism spectrum. The most recent classification of ‘autism spectrum disorder’ combines the previous diagnoses of ‘childhood autism’, ‘Asperger Syndrome’, and ‘pervasive developmental disorder (unspecified)’ (ICD-10, WHO, 2016). However, anyone previously given these diagnoses continue to hold the alternative terms.

It is important to note that the Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-5), as published by the American Psychiatric Association in 2013, is also regularly used in defining autism. Therefore, the full DSM-5 diagnostic criteria for autism is also included in appendix 3.

A more accessible, less medicalised description of autism was first introduced by Wing and Gould in 1979, now known as the ‘triad of impairments’. The researchers investigated common features of autism, defining three key areas of differing characteristics: social communication, social interaction, and imagination (flexibility

of thought). This is explained visually in figure 2.1: having difficulties in all three areas characterises autism.

Whilst a diagnosis is made based on behavioural observations, autism is considered a neurodevelopmental condition that is the result of differences in brain development. However, research is not yet sufficiently advanced to be able to determine these differences at the biological level (Happé & Fletcher-Watson, 2019).

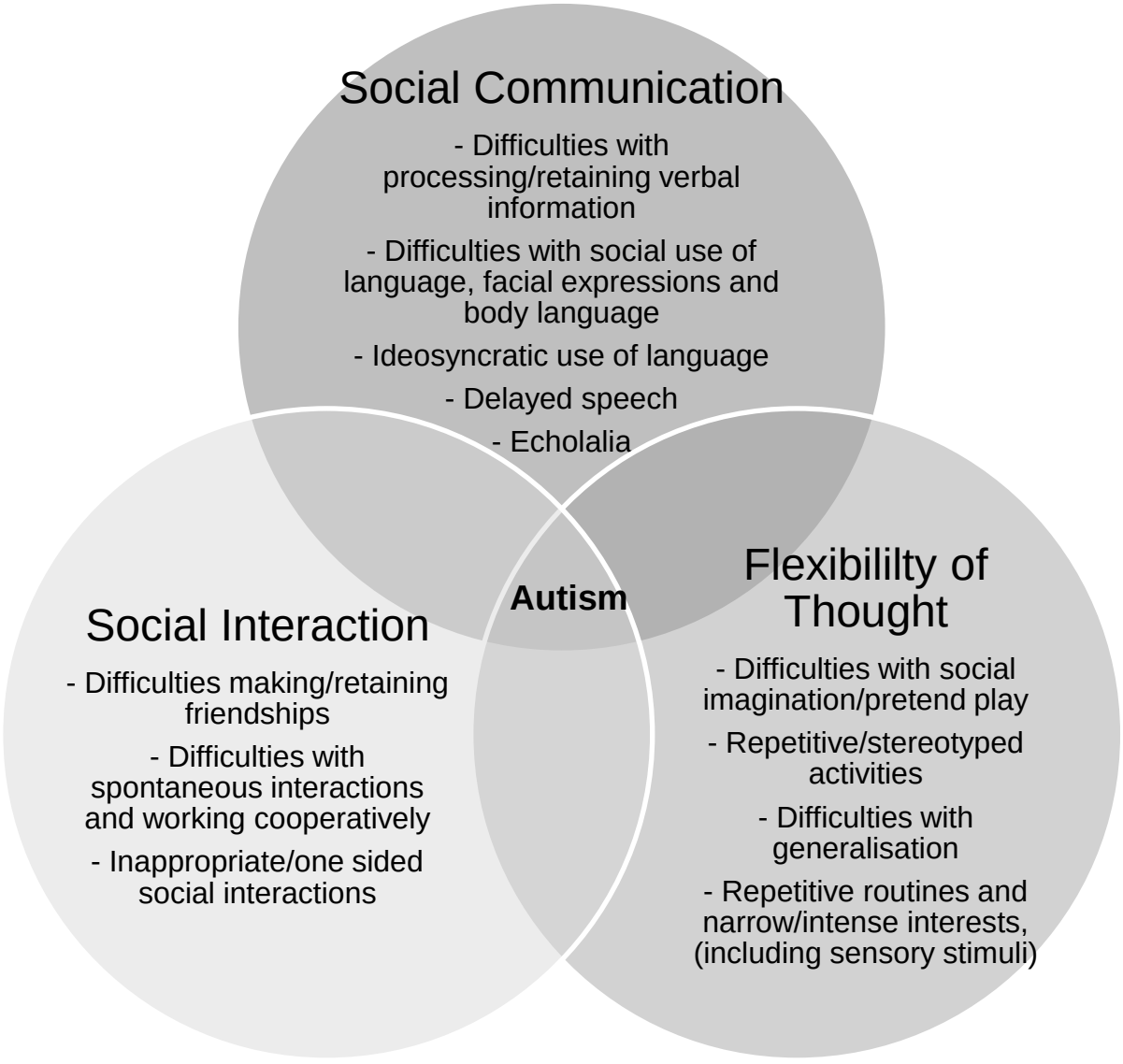


Figure 2.1. Triad of Impairments: examples of difficulties in each area. Adapted from Wing & Gould (1979) and Wing (1997)

2.4.2. Prevalence

The National Autistic Society (NAS) reports the prevalence of autism in the UK as around 1 in every 100 people (NAS, 2018). This figure comes from three studies: one exploring prevalence in children (Baird et al., 2006) and two in adults commissioned by the NHS (Brugha et al., 2009; 2012). Likewise, the National Institute for Health and Clinical Excellence (2011) also suggest the approximate prevalence of 1% in the UK. This suggests there are approximately 700 000 people in the UK with autism. However, these studies are dated and may not reflect recent trends.

The Northern Ireland Department of Health collects quarterly data on all pupils of school age, including the prevalence of autism. The most recent publication suggests an 11% rise per year in the number of diagnoses of autism between 2009/10 and 2017/18, with the most recent prevalence in Northern Ireland reported to be approximately 2.9% (1 in 34 children), compared with 1.2% (1 in 83) in 2008/09 (Waugh, 2018). The population in Northern Ireland accounts for only a small percentage (2.8%) of total UK population (Office for National Statistics, 2011), therefore further research is needed to determine whether this increase in prevalence is found throughout the rest of the UK.

The current gender ratio is approximately 5 males for every 1 female diagnosed with autism (Fombonne, Quirke & Hagen, 2011). However, there continues to be a debate regarding the accuracy of this figure due to an under-recognition of females with autism (Gould & Ashton-Smith, 2011).

2.5. Assessment and Interventions for Autism-Related Needs in Educational Psychology Practice

Autism is one of the most common primary needs for children with special educational needs (DfE, 2016). In 2014 it was reported that 71% of pupils with autism attended a mainstream school, many requiring external professional support in meeting a special educational need (DfE, 2014). However, a report by the All Party Parliamentary Group on Autism (APPGA) (2017) highlighted that 70% of children with autism did not receive additional support in school for over 6 months, and 50% waited over a year for professional support. This report also recommended that local authorities should attempt to meet need within appropriate school placements and avoid high cost or distant placements. However, understanding the needs of the individual, and therefore ensuring provision is appropriate, is challenging to achieve without involvement from a professional such as an EP. Further figures highlighting the need for a comprehensive EP assessment can be found in figure 2.2. This data is based on information from 2,573 parents of children with autism and 176 children with autism.

APPGA survey results
• Less than 50% of children with autism say they are happy at school.
• 70% of children with autism say their peers do not understand them.
• 50% of children with autism say their teachers do not know how to support them.
• 60% of children with autism, and 70% of their parents, say that having a teacher who understands autism would make the biggest improvement.
• 40% of parents felt their child's school placement did not fully meet their child's needs.

Figure 2.2. APPGA survey results on autism and education in England 2017 (p4)

Furthermore, the National Autistic Society, a leading charity supporting people with autism, reports a number of findings from research with 295 children with autism, and 739 parents/carers of children with autism, highlighting why effective assessment and intervention approaches in school are important for this population (figure 2.3).

NAS survey results
• 34% of children with autism say the worst thing about being at school is being picked on.
• 63% of children with autism are not receiving the type of provision their parents think would be best for them.
• 17% of children with autism have had a fixed term exclusion (FTE). 48% of these had at least 3 FTEs. 4% had received permanent exclusions from at least one school.

Figure 2.3. National Autistic Society findings relating to the impact of autism in school (Reid, 2011, p8)

Whilst there may be some limitations of these figures as a result of response bias and therefore need to be taken with caution, the figures do highlight the reasons why effective EP assessment and intervention for children with autism is important.

2.6. Assessment and Intervention Approaches in Educational Psychology Practice

There are a number of assessment and intervention approaches developed to support the needs associated with autism. The term ‘assessment’ in this context refers to the ongoing assessment and monitoring of current needs, not a diagnostic assessment of autism.

2.6.1. National Guidance

The National Institute for Health and Care Excellence (NICE) guidelines recommend social communication-based interventions to support needs related to the core features of autism (NICE, 2013). The NICE guidelines recommend the following (figure 2.4):

Strategies to support the core needs relating to autism should:
❖ Aim to increase joint attention, engagement, and reciprocal communication
❖ Aim to increase others' understanding, sensitivity, and responsiveness to the child's communication and interaction needs
❖ Be adjusted to the child's developmental level
❖ Include techniques of modelling and video-interaction feedback
❖ Include techniques to expand the child's communication, interactive play, and social routines

Figure 2.4. NICE guidelines regarding specific intervention for the core features of autism: psychosocial intervention (NICE, 2013, section 1.3.1)

NICE strongly reject the use of antipsychotics, antidepressants, anticonvulsants, or exclusion diets for the core needs relating to autism (NICE, 2013, section 1.3.2). When children with autism present with behaviour that challenges, NICE guidelines highlight the environmental and situational impacts which should be considered, such as sensory needs, change to routine, or lack of predictability and structure.

Interventions need to be grounded in an evidence base, supporting the underlying needs associated with autism, rather than attempting to minimise or reduce behaviour seen to be difficult, or based on flawed, or unevidenced theories of autism

as has been the case in the past (Pellicano, Dinsmore & Charman, 2013). Further, as each individual with autism has their own unique profile of development and needs (Brownell & Walther-Thomas, 2001; Dingfelder & Mandell, 2011), the intervention must be adapted to meet the needs of the individual and reviewed regularly to ensure the intervention is appropriately meeting need (Fleming, Hurley & Mason, 2015; Miller & Frederickson, 2006).

Robinson (2017) conducted research into EP assessment and intervention with children with autism. A key finding indicates that approximately 30% of an EP's caseload involved an intervention for children with autism. This highlights the prevalence of autism in EP practice and emphasises the importance of the EPs knowledge base of interventions for children with autism. Further findings from this research are (Robinson, 2017, p.13):

- EPs are well-placed to offer advice to schools regarding interventions for autism
- EP assessment of the needs of children with autism enabled a collaborative, individualised approach to interventions, many of which could be delivered in mainstream schools
- EP interventions take place at a systemic level, supporting others (such as school staff and parents) to implement the interventions

2.6.2. Approaches in Educational Psychology Practice

EPs are required by their regulating body (Health and Care Professions Council, 2012) to engage in and implement evidence-based interventions in their practice. There have been two noteworthy systematic reviews of interventions for autism,

reviewing the evidence base for interventions from the past 29 years, with a focus on educational practice (Wong et al., 2015; Bond et al., 2016).

Wong et al. (2015) found 27 evidence-based interventions for children with autism. Many of these were behavioural, although some were based on social skills training, visual supports, cognitive behavioural interventions, modelling, Picture Exchange Communication System (PECS) and technology-aided interventions, including video modelling. Bond et al. (2016) corroborated the finding regarding behavioural approaches, whilst also reporting the evidence base of peer-mediated interventions, multi-component social skills interventions, play-based interventions, narrative approaches, and video modelling. Both systematic reviews commented on the clear bias towards research in the younger childhood years (3-8 years), with little research focusing on older young people.

Further to this literature Robinson (2017) investigated the approaches used specifically in EP practice to support children with autism. EPs reported using approaches which focused on improving the underlying needs associated with autism, such as difficulties with social communication, emotional regulation, and cognitive skills, grounded in the theories of autism described in appendix 4. No EPs reported using behavioural approaches which focus more on the observable difficulties, despite there being a substantial evidence base for such approaches. The interventions typically used and not used in EP practice are summarised in table 2.2.

Robinson (2017) found that EPs were less likely to recommend and implement interventions requiring greater training and support from external professionals, such as Lego Therapy, and video self-modelling, and those with behaviourist

underpinnings, such as discrete trial intervention (Lovaas, 1987) and pivotal response training (Koegel et al., 1999). EPs were more likely to recommend practical, easily implemented interventions, such as social stories (Gray, 2015), social skills programmes (Rutten, 2007), and visual prompts (Cohen & Gerhardt, 2016). This indicates that EPs use more than simply the evidence base in determining the best approach for children with autism, and the practicalities and ethics of an approach appear important factors in the decision-making process.

Interventions reported as used by EPs	Interventions not reported as used by EPs
TEACCH *(Treatment and Education of Autistic and related Communication handicapped CHildren)* Mesibov, Shea & Schopler, 2005	**ABA** (*Applied Behavioural Analysis*) Baer, Wolf & Risley, 1968
SCERTS (*Social Communication Emotional Regulation Transactional Support model*) Priant et al. 2006	**PRT** (*Pivotal Response Training*) Koegel et al. 1999
DIR (*Developmental, Individual-differences, and Relationship-based model*) Greenspan & Wieder, 1997	**ESDM** (*Early Start Denver Model*) Smith, Rogers & Dawson, 2008

Table 2.2. Types of interventions used by EPs for children with autism (Robinson, 2017)

In line with this suggestion, Burnham (2012) reports that, in practice, EPs favour their knowledge of the child and context, and the utility and social value of the approach, to determine the appropriateness of an intervention, above the evidence-base for the intervention. EPs were found to be pragmatic in their approach to interventions, combining elements of evidence-based practice with practical and realistic opportunities in the educational environment (Burnham, 2012). This suggests that having a practicable, user-friendly intervention is just as important as the evidence base behind the model.

2.7. Barriers to Effective Assessment and Intervention

Stobie (2002, p.206) asserts that "...*educational psychology [practice] exists within the context and ecology of other systems*" indicating that practice can be highly influenced by several external factors. Durlak and DuPre (2008) explored barriers to the implementation of interventions through an extensive meta-analysis. All barriers found in this research related to factors beyond the effectiveness of the approach, such as pragmatic and organisational factors. Examples of such are: funding, policies, interagency working, confidence, training, and professional support. However, this meta-analysis investigated a wide range of interventions covering: mental health, physical health, substance misuse, and academic achievement, with none stating a specific intervention relating to autism. Kasari and Smith (2013) later explored barriers to intervention specifically in relation to autism, finding some overlaps, such as contextual factors and pragmatics, however, also finding that the properties of some autism interventions themselves create barriers, for example, the complexities of an approach. However, looking at these in more

depth, it is the practical consequences of these which appear to create the barrier, rather than the complexity itself. For instance, the impact on time, cost, intensity, training, resources, etc. The key barriers found in the literature are explored further under the following subheadings:

- Research conditions versus real world conditions (2.7.1)
- Confidence and collegial support (2.7.2)
- Organisational and time factors (2.7.3)
- Multidisciplinary working (2.7.4)

2.7.1. Research Conditions Versus Real World Conditions

Clarke (2004) describes how psychology has always strived to be part of the scientific community, putting heavy emphasis on scientific rigor and formalised evidence. However, by doing so, psychology misses a crucial aspect of reality, in that all situations and contexts are distinct and each individual is unique. Therefore, a key barrier affecting educational psychology practice arises in the space between the research base and the real world in which we work. This suggestion has also been noted by a few researchers (Kratochwill, 2007; Kasari & Smith, 2013).

Meighan and Siraj-Blatchford (1997) highlight the impact of the school ethos on any attempt at change in schools, including EP recommendations. Whilst a strong research base may, in theory, indicate a particular intervention is best placed to meet a child's needs, the environmental and systemic context must also be considered when determining the appropriateness of the strategies. Whilst many EPs will do this in their practice, it is not always possible to have a full understanding

of the culture and ethos of a school without being embedded in the school or particularly when an EP has limited time in the school. EPs often rely on school staff to share their knowledge of the school culture, ethos, processes, and motivations to build a pragmatic solution. This can be challenging when EPs are often seen as the 'expert' (Christie, Hetherington & Parkes, 2000) and therefore weight can be given to the EP voice over the practicalities of the environment, causing a barrier to practice.

Similarly, each child is unique with individual systems and influences affecting the appropriateness of a particular intervention for them, or their response to certain strategies. These include home life, school life, past experiences, relationships, and wider cultural factors. Whilst an EP assessment would ideally explore these in depth, an EP cannot fully understand every individual complexity in detail. Furthermore, time restraints and access to key adults can limit the quality of information gathering in EP practice. Therefore, EPs make judgements regarding best approach based on the information available. As a result, the 'ideal' conditions of a randomised controlled trial (a closed system) may not translate into the reality of the context (an open system), creating a barrier to the effective use of an intervention (Scott, 2008; Banathy, 1991; Katz & Kahn, 1966).

2.7.2. Confidence and Collegial Support

EPs often offer generic holistic approaches to assessment, in contrast to specialist, focussed assessments. This raises a concern regarding a lack of specialist knowledge as a potential barrier. All EPs will have received some training regarding autism during their training course, however, how much EPs know about autism and

how confident they feel in assessing need, may vary considerably. Many EPs go on to specialise or develop particular interests in certain areas within psychology, however, for many this area will not be autism. Whilst it can be beneficial to have EPs with varied specialisms within a service to widen the expertise of a whole service, it can also become a barrier when engaging in day to day school work, particularly with the aforementioned prevalence of autism-related work in EP practice (Robinson, 2017). This is summarised in the following quotation from the Department for Education and Employment's review of educational psychology practice (2000), resulting in the need for additional training in specific areas:

> *"...educational psychologists in several case study interviews expressed concerns about the extent to which they have the requisite knowledge and skills to enable them to work in this wider context. Many feel that whilst their initial training has prepared them for this wider role, the increasing focus of their work on assessments mean that they either lack confidence and/or need additional training to ensure they are able to fulfil the new role expected of them.*" (DfEE, 2000, p.85)

Waite and Woods (1999) have investigated EP confidence in assessing needs relating to autism. Although the small sample size (N=12) must be considered, this study found that confidence ranged widely, with some EPs rating their confidence in this area as low as 3 out of 10. This related predominantly to more complex needs, such as additional learning needs or challenging behaviour, with some EPs indicating a need for further professional development in these areas. This is supported by Suldo, Friedrich and Michalowski's research (2010) which found that EPs felt that having a wide range of responsibilities and areas of knowledge did impact on the depth of training and, therefore, maintaining a level of competence in all areas. This is an important finding, particularly as raising school and general

public understanding of autism is a current aim (APPGA, 2017), therefore EP involvement with children with autism may become more heavily focused on more complex needs, requiring more specialist knowledge (Martin, 2012).

Likewise, EP training regarding language needs appears to vary considerably, with some experienced EPs reporting to have learnt more from other professionals than in formal training (Sedgewick & Stothard, 2019). Considering language needs prior to the age of 3 are a key aspect of an autism diagnosis, this finding has significant consequences on the support offered by some EPs to children with autism and their families. Additionally, given these reported benefits of collegial support and learning, a lack of supervision or access to peer support may also be a barrier to EP professional practice. The British Psychological Society Division of Educational and Child Psychology (BPS DECP, 2010) sets out that "*all EPs...should engage in professional supervision"* (p.5) and the Health and Care Professions Council (HCPC, 2015, p.8) Standards of Proficiency states that all EPs must *"understand the importance of participation in... supervision*". Most local authority EPSs will have structured procedures with regards this and many EPs will access informal peer supervision as appropriate, making use of specialisms of colleagues. However, at times EPs may have limited access to colleagues or supervisors, impacting on their practice, for example, influencing the type of approach used or formulations.

2.7.3. Organisational and Time Factors

In all EP services the prioritisation of child need depends upon school staff, who may not have good knowledge of SEN, and therefore some children may not access EP support when appropriate (Weeks, Hill & Owen, 2017). Therefore, whilst a

particular approach could be highly beneficial for a school, if the school does not request this then it is unlikely to utilised. Also, whilst EPs continue to have a duty to provide independent advice, schools are not required to act on this.

Many services use a time allocation model of working to manage the high demands on EP time. The time allocation model accounts for both statutory and traded work and was initially introduced to manage rising levels of statutory requests following the 1981 Education Act (Leadbetter, 2002). This model was present in EPSs long before the more recent shift towards trading (Gillham, 1978), although it does also support traded models in the organisation of time. However, this model can become a barrier to responding effectively to the rapidly changing needs of a school (DfEE, 2000). Atkinson, Corban and Templeton (2011) highlight that certain types of work can be avoided as a result. For example, therapeutic work can take large amounts of EP time and therefore schools may not fund this type of work, or EPs may not raise the prospect of this as a result of time pressures (Hoyne & Cunningham, 2018). Using a time-allocation model, particularly in traded services, EPs are under pressure to deliver good 'value-for-money' by delivering as much as possible in restricted amounts of time (Baxter & Frederickson, 2005). Correspondingly, EPs also need to provide evidence of their value within the traded context, with a greater pressure on creating detailed written reports, again within limited timeframes (Islam, 2013).

Overall, these additional organisational, political, and time pressures can impact on the approach used by EPs in their practice, and thus the type of assessment and intervention approaches used with children with autism. Whilst an intervention might

be considered ‘gold standard’, it must also fit in to the time allocated and with the vision of the school commissioning the service.

2.7.4. Multidisciplinary Working

Multidisciplinary working is beneficial to a wide range of child outcomes (Children’s Act, 2004; Bercow Review Advisory Group, 2008; NICE, 2013). Two independent audits of EP engagement in multi-agency working (Farrell et al., 2006; Palikara et al., 2007) found that EPs collaborated very little with other professions, such as speech and language therapists.

One barrier may be related to the differing conceptualisations of child need, with different focuses playing key roles in how child need is understood and therefore how they should be approached. For example, for a child with autism, the focus on language development by a SALT may differ from an EPs focus on social skills, resulting in differing views regarding priority of child need and therefore differing intervention approaches. A shared vision is important in creating a joined-up piece of work with benefits to the child (Law et al. 2001), and a good understanding of the expertise of other professions is vital in achieving this (Dunsmuir, Clifford & Took, 2006). McConnellogue (2011) examined the barriers to joint EP and speech and language therapist work, finding that conceptualisation of need was not seen as a barrier. Rather, it was felt to be administrative difficulties which reduced collaboration, such as poor systems for exchanging information, particularly between the differing local authority/NHS systems. A concern was also raised regarding consent to share information, creating a barrier to consistent information sharing between services. This links with the aforementioned time constraints – if consent is not overt and time is limited, EPs may err on the side of caution and not

reach out to other professions (Dunsmuir et al., 2006). Several studies have also suggested these factors as possible barriers, reporting difficulties in interagency working as a result of cultural or service differences (Brown & White, 2006; Cameron & Lart, 2003; Harbin, 1996), rather than conceptualisation of need as a barrier.

McConnellogue (2011) also found that improvements could be made regarding school facilitation of interagency working. For example, it is sometimes the case that schools do not share when another professional is, or has been, involved. This may simply be due to oversight, or it may be a lack of understanding regarding relevance of this information. It may, therefore, be the responsibility of the EP to routinely check this information in order to reduce this possibility as a barrier for multiagency working.

Finally, time may be an influencing factor in multi-disciplinary working. Dessent (1996) raises the issue of inadequate resources, including finances and time, in limiting interagency collaboration. Dunsmuir et al. (2006) explored this in more depth, indicating that practically finding the time when both (or all) professionals are available at the same time, even for a phone call, can be challenging. This links with the organisational factors raised in section 2.7.3.

2.8. The SCERTS Model

2.8.1. Background and Evidence Base

The SCERTS model was initially created in the USA by collaboration of five researchers (Prizant, Wetherby, Rubin, Laurent & Rydell, 2006). It developed from over 30 years' worth of research conducted by the authors, constituting over 100

journal articles, chapters, and books from the authors' research (Prizant et al., 2006). The SCERTS model is further based on extensive research relating to child development, language acquisition, emotional regulation development, and other aspects relating to autism. This includes the foundational research of child development and learning by Piaget (1971) and Vygotsky (1978), spanning to more contemporary research in these areas and autism (Klin et al., 2002; Baron-Cohen, Leslie & Frith, 1998; Attwood, 1998; Schuler, 1995). Research with direct relation to specific elements of the SCERTS model are provided by the authors of the model (Prizant et al., 2007) and highlighted in appendix 5.

An educational approach for children with autism should...
❖ ...directly address the core developmental challenges of children with autism. ❖ ...be based on current knowledge of child development which places learning within the context of natural environments and is both child and family centred. ❖ ...be individualised to match a child's current developmental level and his/her profile of learning strengths and weaknesses. ❖ ...demonstrate a logical consistency between its long-term goals and teaching strategies to achieve these goals. ❖ ...be derived from a range of sources. ❖ ...develop and apply meaningful measures of progress and outcome

Figure 2.5. Recommended practices from the NRC (2001) as met by the SCERTS model (Prizant et al. 2006)

Additionally, the SCERTS model is aligned with the recommendations by the National Research Council for educating children with autism (NRC, 2001) as summarised in figure 2.5.

2.8.2. Principles of the Approach in Practice

The three key areas of the model – social communication, emotional regulation, and transactional support – are developed from an extensive evidence base relating to key areas of need with children with autism (Prizant et al., 2006). Each area is formed of two elements, as described in figure 2.6.

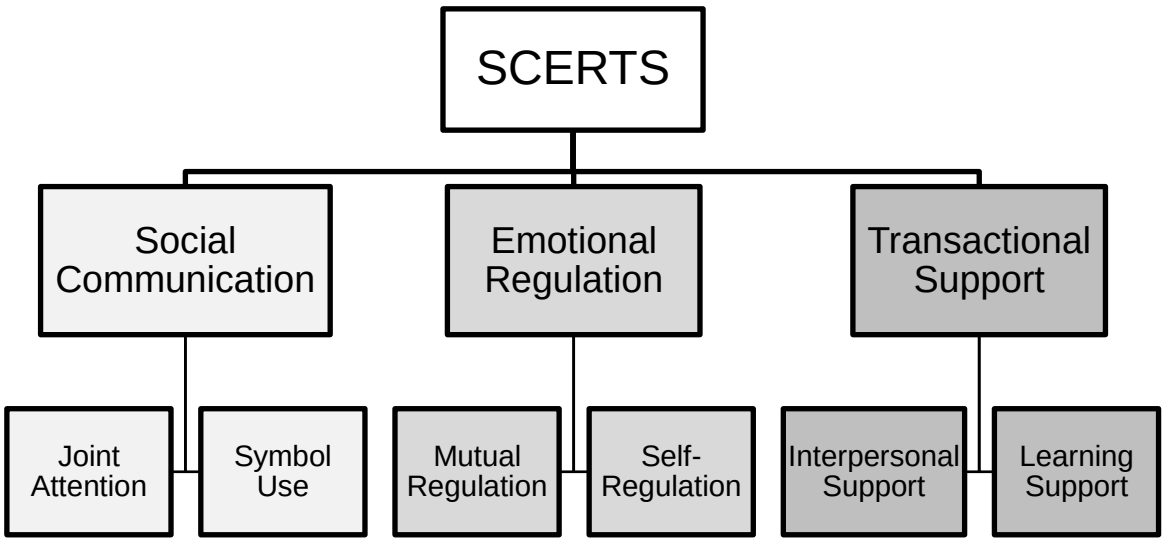


Figure 2.6. Elements of each section of the SCERTS model

Social Communication

The SCERTS model is built from literature regarding both typically developing children and children with autism. The model creates a framework based on typically developing milestones necessary for functional and effective social communication and uses these to support children with autism through the essential steps (Wetherby & Prizant, 2000). This is paired with literature regarding autism to create an understanding of *why* these steps are more difficult for children with autism (see appendix 4 for literature on theories of autism). In particular, the social communication aspect of the SCERTS model is based on the neurobiological role

of oxytocin in children with autism and the consequential limited opportunity to practice social skills (Sasson & Touchstone, 2014; Fujisawa et al., 2014). The authors state that it is vital for social partners (people the child may have interactions with) to understand the strengths of the individual, particularly what they are motivated by, therefore releasing oxytocin, and pairing this with social interactions (Prizant et al., 2006). Additionally, social partners must improve the frequency and effectiveness of the child's social interactions, providing them with more opportunity to practice social skills and "*fall in love"* with the social world (Rubin, 2017). The knowledge and comprehension of the underlying theory of autism, on which the model is based, is crucial to the practitioner's implementation of the model. Consequentially, a significant proportion of the manuals and direct training is spent focusing on the underlying theory of child development and language acquisition. This is divided in to two main aspects of social communication: joint attention and symbol use (figure 2.7).

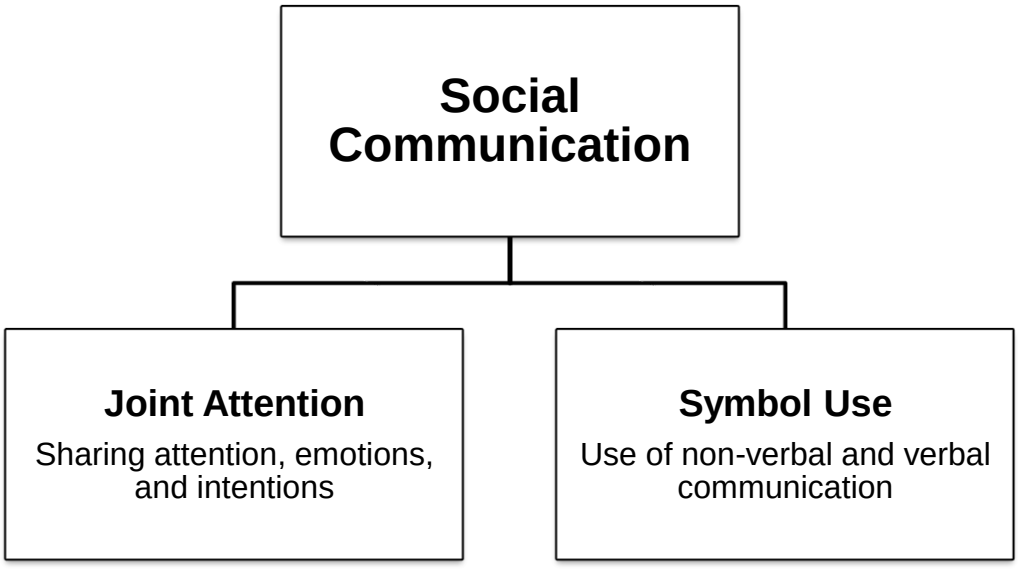


Figure 2.7. The two core elements of social communication in the SCERTS model (Prizant et al., 2006)

The SCERTS approach uses a three-stage developmental model based on social communication skills (figure 2.8). This framework aims to simplify a complex lifespan model, improving understanding of the current social communicative difficulties faced by the child at any time in their development. The two core elements of social communication (figure 2.7) continue throughout the three developmental stages with increasing levels of complexity.

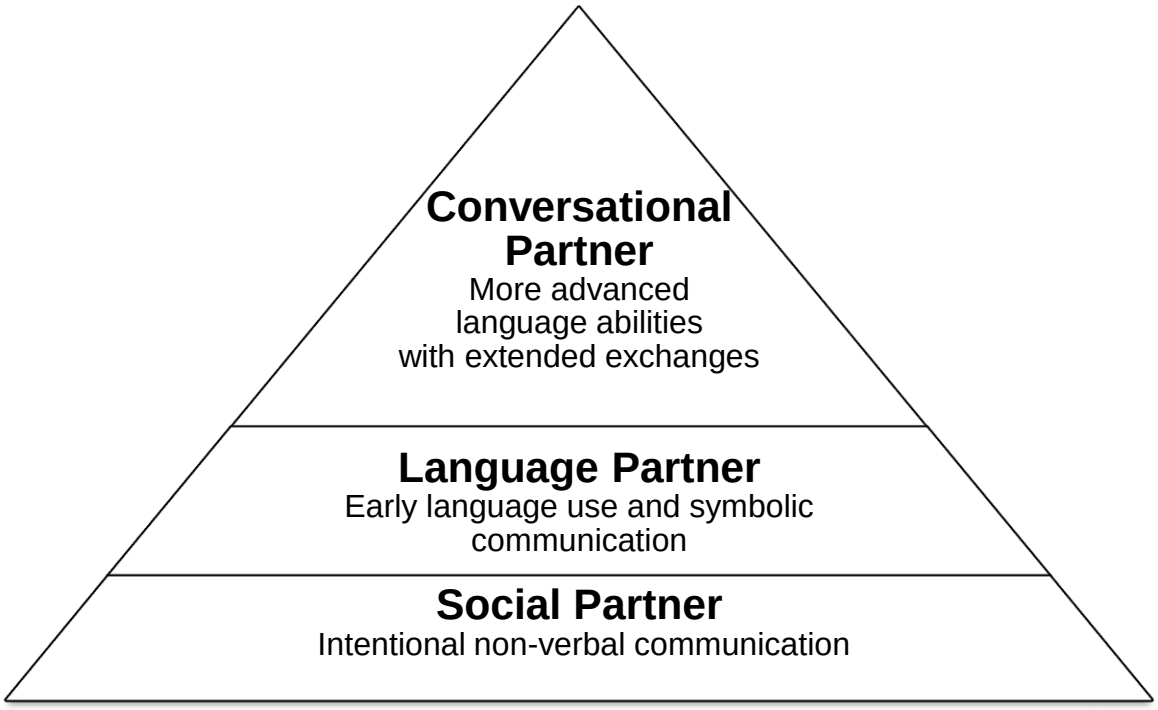


Figure 2.8. Three-stage developmental model of Social Communication (Prizant et al., 2006)

Emotional Regulation

The basis of the emotional regulation component of the SCERTS model developed from an understanding of two core aspects to maintaining an optimal arousal state (see appendix 4): mutual regulation and self-regulation (Tronik, 1989). These constitute the two core emotional regulatory elements focused on throughout each developmental stage (figure 2.9).

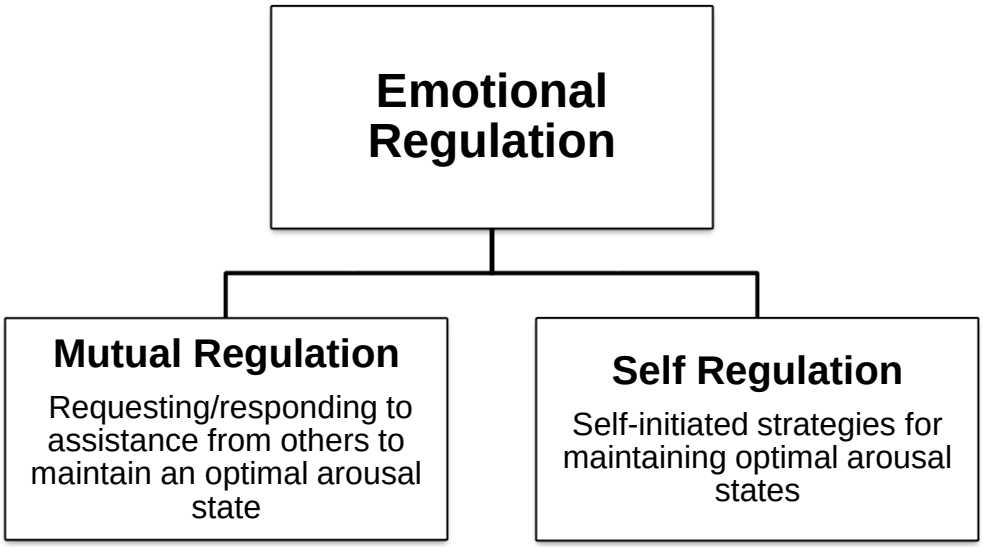


Figure 2.9. The two core elements of emotional regulation in the SCERTS model (Prizant et al., 2006)

The SCERTS model shares an understanding of three levels to emotional regulation based on extensive research into child development (appendix 4) (Prizant & Laurent, 2011): behavioural, language, and metacognitive strategies (figure 2.10). These relate to the stages of social communication development (figure 2.8), although do not map on directly. For instance, behavioural strategies of emotional regulation are developed in the early social partner stage, however, continue through to conversational partner stages (Prizant et al., 2006).

The terminology used throughout a SCERTS assessment utilises the three social communication levels of development (figure 2.8) as this underpins all other linked development. However, the emotional regulation stages are used by practitioners in understanding the behaviour demonstrated by children with autism during a SCERTS assessment and consequently used to ensure appropriate interventions based on their level of development in this area.

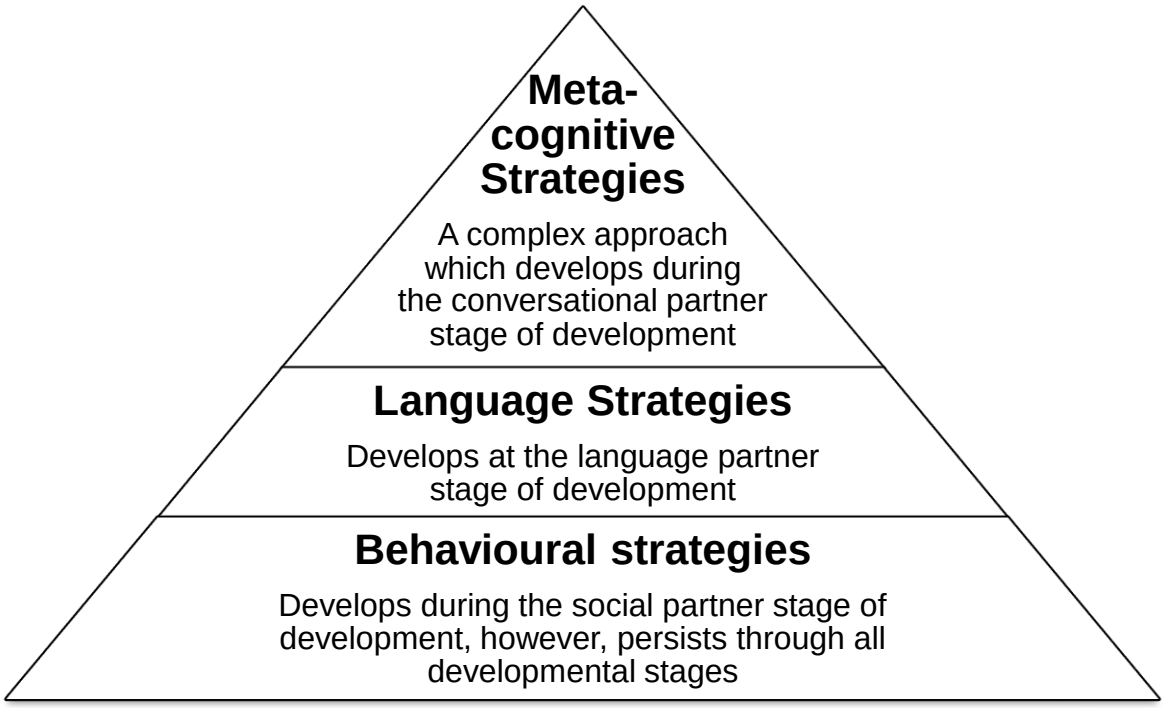


Figure 2.10. Three stage developmental model of emotional regulation (Prizant et al. 2006)

Transactional Support

Prizant and Wetherby (1989) assert that a transactional model of development is most appropriate in developing social communication and emotional regulation skills for children with autism. This situates social and emotional learning in the context of the child's system, that is, interacting with families, school staff, peers, professionals, at home, in school, and elsewhere. This is in contrast to some support packages described in section 2.6 which may implement discrete interventions. The SCERTS model is averse to a 'within child' approach to autism, emphasising the dynamic, transactional nature of autism (Wetherby & Prizant, 2000). Not only do children with autism have difficulties understanding the social world, the social world often has difficulties understanding the child with autism. Prizant et al. (2006) highlight that many adults working with children with autism may feel overwhelmed,

confused, or defeated. The knowledge and understanding of the complexity of child development relating to autism is a fundamental aspect of the SCERTS model. This, along with the structured approach of the model, aim to create order and a sense of hope in the system around the child.

Just as the social communication and emotional regulation aspects of SCERTS constituted two elements, the transactional support aspect also constitutes two elements: interpersonal support and learning support (figure 2.11). This emphasises the equal role social partners have in the child's development, dissipating responsibility from the child. As such, the model advocates a multi-disciplinary approach to assessment and intervention. Prizant et al. (2003) assert that children with autism encounter more difficulties when faced with inconsistency across environments, therefore highlighting the need to ensure coordination and consistency amongst professionals and families, despite possible logistical difficulties (Quill, 1995).

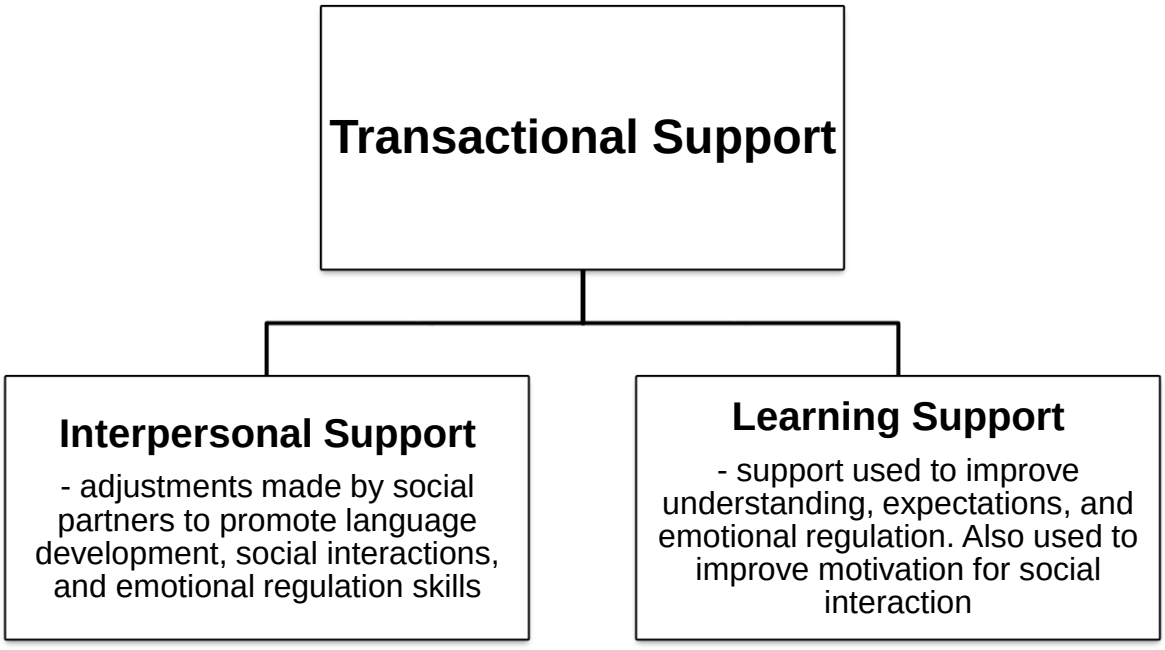


Figure 2.11. The two core elements of Transactional Support in the SCERTS model (Prizant et al. 2006)

The SCERTS Model Priorities

Overall, the key aims of the SCERTS model are outlined in table 2.3.

	Aims of the SCERTS model
1.	A developmental framework underpinning social communication and emotional regulation
2.	A goal-setting framework underpinning social communication and emotional regulation – creating an individual education plan (IEP) based specifically on the unique needs of the child and stage of development in non-cognitive areas
3.	A shared responsibility with the social world (transactional support) – goals must be created for social partners, not just for the child with autism

Table 2.3. Key aims of the SCERTS model (Prizant et al. 2006)

Use of the SCERTS Model in Practice

The SCERTS model was designed to be comprehensive to meet the complex needs of children with autism. However, Prizant et al. (2006) acknowledge the challenges associated with the comprehensiveness of the approach, including: lack of planning time, lack of administrative support, and a rigidity of professional approaches and service boundaries. The importance of flexibility in improving implementation was highlighted in a meta-analysis by Durlak and DuPre (2008). Consequently, the authors developed flexibilities in the use of the approach, including a short version of the SCERTS assessment process, and acknowledged other approaches may also be used. These are summarised in table 2.4.

Types of SCERTS assessment	
SCERTS Assessment Process (SAP)	• A criterion-referenced tool linked to the SCERTS model curriculum (based on developmental steps in social communication and emotional regulation) • Uses direct observation across social partners and environments and multiple sources of information, including the family, to conduct thorough assessment of strengths and needs • Creates a developmental profile, a comprehensive IEP, and a progress tracker for social communication and emotional regulation skills
SCERTS in Action (SIA)	• A condensed version of the SAP, using a subset of key milestones in social communication and emotional regulation (Prizant et al., 2004) • Direct observation used during a targeted activity • Appreciative inquiry used in consultation • An educational plan is created based on identified goals and progress tracked over time.
Other uses	• The knowledge and tools associated with the SCERTS model can be used flexibly to meet the needs of the individual and the context

Table 2.4. Examples of various approaches using the SCERTS model

Further, the third aim of the SCERTS model, as reported in table 2.3, relates to the shared responsibility with the social world – i.e. the adults and peers working with the child. Durlak and DuPre (2008) highlight that shared decision making and shared responsibilities consistently leads to better and more sustained implementation of an approach in practice. As a result, the SCERTS model emphasises the importance of a collaborative approach to both assessment and intervention.

2.9. The Current Research

2.9.1. Summary of Literature

The SCERTS model is developed from a significant volume of research and literature. Research following the publication of the model has predominantly focused on the efficacy of the approach, demonstrating a beneficial effect in improving social communication and emotional regulation skills in children with autism (Wetherby et al., 2014; Yu & Zhu, 2018; Morgan et al., 2018; O'Neill et al., 2010; Odom et al., 2010; Limbert, 2017). Two of these studies employ a randomised controlled trial format, demonstrating a high level of rigor, reliability, and validity in the methodological approach (Cohen, Manion & Morrison, 2013). Further, in New Zealand the SCERTS approach has been combined with music therapy, with research suggesting beneficial effects using it in this way (Walworth, 2007; Walworth, Register, & Engel, 2009; Ayson, 2011).

Research exploring the impact of the model on professional practice is less evident, with only one published study focusing specifically on the impact of the model on multidisciplinary working in a special school environment (Molteni, Guldberg & Logan, 2013), and one publication presenting a case study of the implementation of the model in a special school (O'Neil et al., 2010). Other research in progress similarly focuses on the impact of SCERTS in special schools, however, with a wider remit exploring the impact on: practitioner use, knowledge, skills, and multidisciplinary working, as well as the barriers and bridges of the approach in the special school context (Hayes, 2015). However, no findings have been published at present.

The special school staff in O'Neil et al.'s (2010) research highlighted a greater understanding of the child due to the use of SCERTS model in their practice. The research also highlighted the positive impact SCERTS had on reflective practice: this particularly related to the transactional support element of the model enhancing practitioners' self-reflective skills and understanding of their own role in the dysregulation of emotions for children with autism. The model developed collaboration amongst staff across the school and improved staff understanding and respect for the various roles of colleagues within the school. However, time-constraints relating to the multidisciplinary aspect of the approach proved to be a significant difficulty. Practitioners also reported that the SCERTS model was only successful as a whole-school approach, with all staff requiring training in order to use the approach productively in practice.

The research conducted by Molteni et al. (2013) echoed these findings. Whilst practitioners required an intensive level of orientation and large amounts of time to become familiar with the model, they did ultimately become secure in using the approach in daily practice. Further, the practitioners particularly valued the quality of the design of the model, resulting in improved understanding of the pupil and their needs. However, the research also highlighted the time-consuming element of the SCERTS approach, with school staff finding it difficult to get all relevant professionals together, even within one school. This was seen as a significant barrier as practitioners felt the approach was not successful without all staff being involved and committed to the model.

Molteni et al. (2013) further extended the previous findings by O'Neil et al. (2010), offering greater insight to the practical elements of the approach. Practitioners

particularly valued the positive approach of the model, impacting on their own view of the child's strengths and needs and embedding a sense of optimism which supported them to support the child (Seligman & Csikszentmihalyi, 2014). However, the research also raised a number of practical issues in the special school context. Molteni et al. (2013) reported that complexity of the SCERTS manuals made them challenging to understand, particularly due to the use of technical language. This impacted on staff engagement in the early stages. However, the school responded to this barrier, creating a user-friendly version of the manuals which significantly improved staff understanding and therefore engagement in the approach. Further, school staff reported that a steering group would be necessary to sustain enthusiasm for the approach in the school, suggesting that the model may have positive initial impacts however these may not continue over time without further support.

As the research relating to the impact of the model on professional practice remains limited, further exploration of wider literature was sought. Helpfully, some of the research evaluating the efficacy of the model (Yu & Zhu, 2018; O'Neill et al., 2010; Limbert, 2017) also raised some practical issues which arose during the implementation of the model.

Some research corroborated the previously reported positive impact of the comprehensive, developmental structure of the approach on professional practice (Limbert, 2017; Yu & Zhu, 2018; Greathead et al., 2016). Yu & Zhu (2018) reported greater practitioner acceptance of the child's challenging behaviours as meaningful protests, creating a positive approach to their practice and improving the relationship with the child and thus outcomes.

Limbert (2017), a trainee EP, utilised the SCERTS approach along with the Local Early Autism Programme (LEAP) in a pre-school setting. The pre-school staff reported positive impacts of the use of SCERTS on their practice, particularly the high level of structure provided by the observation forms offering greater reliability and validity of their findings. However, the EP offered no reflection on their views of SCERTS from an external professional perspective.

Hogan (2018) raised a concern regarding the difficulties in getting clinical and educational teams together, resulting in practical difficulties with many interventions, including SCERTS, while Walworth (2007) and Walworth et al. (2009) reported that the SCERTS approach further enabled multidisciplinary working in their practice. The approach was flexible enough to be used by professionals from different specialisms, allowing use of the same assessment across professions, creating a joined-up approach. This was not only beneficial to the child and their family, but pragmatically beneficial to professional practice.

Finally, Ayson (2011) offered the perspective of an external professional – a speech and language therapist. She highlighted the time-consuming aspect of SCERTS as a visiting professional, adding to this finding previously described within the school environment. As a result, Ayson (2011) suggests that, as an external professional with a large caseload, this model can be difficult to implement with several children at the same time. This finding may therefore also be a potential barrier to the use of SCERTS in EP practice, working similarly as external professionals with schools.

2.9.2. Rationale and Research Questions

Research regarding the SCERTS model is continuing to advance with a clear focus on the efficacy of the approach with children with autism. Research is beginning to develop in understanding the pragmatics of the approach within special schools, and a small amount of literature references the impact on speech and language therapist practice (Walworth, 2007; Ayson, 2011). However, there continues to be a gap in the literature regarding the use of the approach in EP practice. This is not unique to SCERTS – none of the interventions evaluated in Robinson's (2017) systematic review explore this perspective. Whilst it is vital to understand the efficacy of the model, it is also important to understand the functional use of the approach in professional practice (Burnham, 2012) and the barriers to effective assessment and intervention, as demonstrated in section 2.7. This is of particular importance within educational psychology practice as the approach is becoming increasingly used by the profession and many schools utilise this service for support with children with autism.

It is important to understand how, and to what extent, the SCERTS model is being used in EP practice, in addition to understanding whether the aims of the approach, outlined in figure 2.16, are being met. By gaining an understanding of the use of SCERTS in EP practice, the EPS can respond appropriately to any barriers raised to ensure the model is used to its full potential. Therefore, this research aims to answer the following research questions in order to develop an understanding of the pragmatic effectiveness of the SCERTS approach in EP practice:

- RQ1: How is the SCERTS approach used in EP practice?
- RQ2: What impact has the SCERTS approach had on EP practice?

CHAPTER THREE

METHODOLOGY

3.1 Overview of Chapter Three

This chapter presents the methodology used in this research. Firstly, the philosophical perspective of the research is described and the influences on the methodology and methods used are discussed. Secondly, the background to the research, including the service context and participant demographics, are described offering study-specific information impacting this work. The two phases of the research – the questionnaires and focus groups – are then presented. The research questions are reiterated and relevant ethical considerations discussed.

Towards the end of the chapter the methods of data analysis are presented along with a discussion of the reliability, validity, and limitations of the data collection and analysis methods.

3.2 Epistemology and Conceptual Orientation

Pragmatism, as a paradigm, was initially developed by James (1907) and further expanded on by Dewey (2008). Whilst post-positivists view reality as existing independent of human interpretation, and constructivists view reality as an individual understanding of the context (Mackenzie & Knipe, 2006), pragmatists view these positions as inextricably linked (Dewey, 2008). Dewey (2008), as a classical pragmatist, claims that one's experiences are limited by the boundaries of the outside world, and one's understanding of the outside world is linked with one's interpretation of one's experiences (Morgan, 2014). As a result, understanding the situation and the practical consequences of the inquiry is what drives pragmatic

research, rather than rooting the research in a particular ontological perspective or focusing on defining the meaning of reality (Feilzer, 2010).

My pragmatic epistemological beliefs influenced the focus and perspective of the research and the research questions chosen. I believe it is important that the research offers a practical use, and by exploring the use and impact of the SCERTS model in EP practice this thesis achieves this aim.

A pragmatic approach to research is neither theory driven, as with post-positivism, nor theory generating, as with constructivism (Guba, 1990), rather, it is concerned with the problems and solutions of the context (Patton, 1990), understanding the situation through the most practical and useful methods available. Often pragmatic approaches utilise mixed-methods designs to gather a variety of information from various perspectives to create a holistic view of the situation. Creswell (2014) links the philosophical stance to the approach by declaring:

> *"Truth is what works at the time. It is not based in a duality between reality independent of the mind or within the mind. Thus, in mixed methods research, investigators use both quantitative and qualitative data because they work to provide the best understanding of a research problem."* (Creswell, 2014, p.11)

The limitations associated with other paradigms, such as the subjective nature of constructivist approaches limiting the replicability and generalisability of the research, and the sometimes-superficial nature of post-positivist approaches in psychology, are minimised through a pragmatic, mixed methods approach. Likewise, the benefits of other paradigms and approaches, such as the depth of

understanding in a constructivist and qualitative approach, and the reliability of post-positivist and quantitative approaches, can be harnessed in a pragmatic, mixed-methods study. Data gathered in pragmatic research is often both quantitative and qualitative, triangulating the data, improving validity and depth of understanding (Robson and McCartan, 2016). However, it is recognised that a mixed methods approach can be highly time and resource consuming, creating a more convoluted, complex piece of research which may not be feasible in practice.

In conclusion, this research draws on a pragmatic, mixed-methods approach. The limitations outlined above were considered and addressed during the design phase of the research. Specifically, the increased demands on time and resources were minimised by utilising an efficient two-stage approach to data collection: online quantitative questionnaires for ease of access, and three concurrent qualitative focus groups, minimising the time aspect related to other forms of qualitative data collection, such as individual interviews. These will be discussed in more detail in the following sections.

3.3. Mixed Methods Research Design

> *"Researchers who use mixed methods employ a research design that uses both quantitative and qualitative data to answer a particular question"* (Hesse-Biber, 2010, p.3).

The use of mixed methods in a pragmatic research study rejects the choice between paradigms, embracing aspects of several positions (Creswell, 2014; Teddlie & Tashakkori, 2009). Often pragmatic research is driven by a social or political

situation, therefore, within the pragmatic paradigm researchers can choose a mixture of methods which best answer the question which has arisen (Tillman, Clemence & Stevens, 2011). Johnson and Onwuegbuzie (2004) suggest that through using a mixed methods design "*words, pictures, and narrative can be used to add meaning to numbers"* (p.21).

A key strength of using a mixed methods approach is the impact of method triangulation – using different data methods to study the same topic (Cresswell & Plano Clark, 2007). By using more than one method the data is enriched and reliability may be improved by counterbalancing the limitations of individual methods. In short, it allows the researcher to cross-check any information gathered. A mixed-methods design also allows for complementarity gaining a greater understanding and a more thorough comprehension of the topic through creating a synergistic effect (Hesse-Biber, 2010). For example, the results of quantitative data collection can inform later interview questioning, resulting in a greater volume of relevant data and providing the opportunity to clarify any queries raised in the initial phase of data collection (Greene, Caracelli & Graham, 1989). In the current research, a mixed methods design was used to collect both qualitative and quantitative data relating to EP use of SCERTS in order to gather a richer data set to best answer the research questions. The quantitative data allowed for a broad overview of trends in EP practice using SCERTS, whilst the qualitative data allowed for deeper exploration of the use of SCERTS, including the barriers to practice, which could not be accessed through quantitative data collection methods.

A mixed methods design can be either concurrent or sequential, creating either a one-stage or two-stage design. Whilst sequential designs provide the opportunity

for clarification, this increases the time element of the research, reducing the likelihood that participants will be retained (Tillman et al., 2011). With both designs, the data needs to be integrated to connect the results. This can be challenging with different forms of analysis often suited to the different methods. The data can be wholly converted to either qualitative or quantitative data or analysed independently and converged in the later interpretation of the results (Bazeley, 2009).

The depth and relevancy of data collected through a two-stage approach was considered most beneficial for the design of this research, described by Creswell et al. (2003) as a 'sequential explanatory design'. This is where quantitative data is collected first and qualitative data is then collected to build on and clarify the findings of the initial quantitative data. With this approach the two stages of the research are overtly linked, with the initial stage informing the second stage. In the current research, this allowed for clarification of the findings of the questionnaire, for example, what 'other uses' of the approach means to different EPs, and improved reflection on their own use of SCERTS as a result of presenting the main questionnaire results at the start of the focus groups. During the first stage it was necessary to gather a wide overview of EP practice, for which quantitative data collection was deemed appropriate. Questionnaires were considered the most effective method for gaining this data. For the second, clarifying, in-depth phase of the study, various qualitative methods were considered, including interviews and focus groups. Observation was not considered effective for this study. The qualitative method used was dependent upon the number of EPs demonstrating interest in the research. As early scoping of the interest in the service suggested larger numbers of interested participants, focus groups were deemed the most efficient and effective method of gaining the data.

3.4. Data Collection Methods

3.4.1. Phase One: Questionnaires

Questionnaires gather large volumes of structured information about a subject (Coolican, 2017). They can be used flexibly to suit the needs of the research, are efficient in time and resources, and can often be analysed with relative ease (Breakwell et al., 2006; Wilson & McLean, 1994). However, when using questionnaires researchers must be aware of their limitations, particularly their potential inability to provide rich information and the lack of control over participant understanding (Cohen et al., 2013; Robson, 2002). Further advantages and limitations of quantitative data collection methods are outlined in table 3.1:

Advantages	Limitations
Quick to administer/collect data	Cannot explore data in more depth. E.g. the 'how' and 'why'
Relatively quick, straight forward analysis	Potential for bias (particularly unknown bias)
Can often be generalised to a wider population	Time consuming preparation work
Greater reliability (replication)	Needs large sample sizes
Can be anonymous	Can force responses, therefore responses may not be accurate
Can be completed remotely	
Can be used with large sample sizes	

Table 3.1. Advantages and limitations of quantitative data collection methods

3.4.1.1. Development

Questionnaires can vary significantly in their approach to collecting data. Coolican (2017) presents various aspects to consider when creating a questionnaire, such as: question type, scaling, organisation and flow, wording, reliability and validity.

Closed-questions focus the response to ensure that the information collected is significant to the research aim (Bailey, 2007). However, this may force an answer which may not be accurate. This type of data is often straightforward to analyse and draw conclusions from. Closed questions can vary further in their approach, such as: dichotomous, multiple choice, or rating scale questions (Cohen et al. 2013). Multiple choice questions offer greater depth than dichotomous questions and retain simplicity, however, continue to force an answer. Rating scales allow for more accurate distinctions whilst retaining the quantitative aspect to the data.

Both multiple choice and rating scales were considered beneficial in collecting data to answer the research questions in this project. Both types of questions utilised a categorical format to improve the efficiency for the participants and to retain consistency for the analysis. To minimise the impact of the information-limiting closed questions, additional open-ended sections were embedded throughout the questionnaire for participants to offer more information or an alternative response, if necessary. Whilst this had the potential to cause difficulties in analysis, it was considered necessary and beneficial to the research aim.

Self-completed questionnaires were considered most appropriate in this research. This format allowed participants to access the questionnaire at a time suitable to them and can be completed at their own pace (Cohen et al., 2013). In addition, by self-completing the questionnaires the participants retained anonymity, improving the reliability of the responses. In using this approach the questions are more open to interpretation (Brace, 2008). It, therefore, becomes vital for the questionnaire to be piloted prior to dissemination (Lavrakas, 2004). This gathers valuable feedback

regarding readability, ambiguities, or difficulties with the questionnaire. It also creates a platform for assessing the reliability and validity of the questionnaire.

The questions used in the questionnaire were developed from breaking down the main research questions into a subset of areas to explore, in order to comprehensively cover all aspects of the wider research questions. Reflections emerging from the literature review were also used to guide the development of the subset of questions. Table 3.2 presents the questionnaire questions in relation to the overarching research questions.

Research Question	Questionnaire Question
Demographics	1. What is your current professional status? 2. What training have you received in relation to the SCERTS approach? 3. When did you begin your training in SCERTS?
RQ1: How is the SCERTS approach used in EP practice?	4. Since learning about the SCERTS approach, how have you used this in practice? 5. Thinking about the different ways of using SCERTS, on average how often do you draw on SCERTS in your practice? 6. What age children have you used the SCERTS with? 7. Thinking about the children you have used SCERTS with, approximately how many have been at each partner stage? 8. Which other professionals have you collaborated with using SCERTS? 9. What diagnoses/difficulties did the children have when you used SCERTS? 10. What types of work have you used SCERTS for? 14.a) How many cases have you reviewed when SCERTS was used? 14.b) Thinking about the cases you reviewed, on average how regular were the reviews? 15. How would you like to use SCERTS in the future? 16. What stops you from using SCERTS more often? 17. What would support you to use SCERTS more often in your practice?

RQ2: What impact has the SCERTS approach had on EP practice?	11. Thinking about the outcome of your assessments using SCERTS, on average how comprehensive was you understanding of the child's needs compared to other methods of assessment typically used? 12. Thinking about when you have used SCERTS, on average how confident did you feel in your choice of intervention/support following the assessment, compared to other assessment tools typically used? 13. Having now used SCERTS in some way, how confident do you feel going forward in your use of SCERTS?

Table 3.2. Development of questionnaire questions in relation to the overarching research questions

3.4.1.2. Pilot

The questionnaire was piloted with two EPs independently. The first EP had a significant amount of experience using the SCERTS model. This EP completed a hard copy of the questionnaire and provided feedback regarding readability, flow, ambiguities, and content validity. Following this a number of edits were made to the phrasing used in the questionnaire and the order of questions. A small number of additional questions were also added in response to the feedback.

The second piloting took place online, using the final format of the questionnaire. The second EP had a small amount of experience using the SCERTS model and had received training in the approach. This EP provided feedback on ease of use, comprehension, and format, including time taken to complete the questionnaire. Only minor edits were made following this.

3.4.1.3. Data Collection

The questionnaire was disseminated via email to 32 EPs in the service using the online platform 'Google forms' (see appendix 6 for a copy of the questionnaire). This was utilised as it was known to be a platform in which all EPs in the service had

access to and the majority of whom also had prior experience of using. This platform also enabled anonymous data collection, protecting the identities of those completing the questionnaire, as well as those choosing not to complete the questionnaire.

Participants were given three weeks to complete the questionnaire online. The researcher provided two email prompts throughout the three-week period to improve participation. Twenty-three EPs completed the questionnaire in this time frame, giving a response rate of 72%.

3.4.2. Phase Two: Focus Groups

Focus groups are a form of group interview, collecting qualitative information shared in discussion between participants in the group regarding a topic donated by the facilitator (Cohen et al., 2013). This method creates a collective view and the route taken and discussions held are closely aligned with views of the group, rather than that of the researcher. Whilst the focus group setting is manufactured for the purpose of the research, the interactions between the participants create a more natural dialogue than individual interviews. Hydén and Bülow (2003) raise that focus groups are time-efficient methods of collecting large volumes of data. However, they produce comparatively smaller volumes of data than individual interviews as the time is shared between participants in the group situation.

Morgan (1988) asserts that focus groups offer a useful method to triangulate data with other methods, such as questionnaires. The subject of the focus group can be developed from prior questionnaire data, expanding on the quantitative data previously gathered as well as verifying the researcher's interpretation of the data

(Stewart, Rook, & Shamdasani, 2006). The method also provides clear evidence for convergence or divergence of opinion on the subject (Morgan, 1996). Further advantages and limitations of qualitative methods, such as focus groups, are outlined in table 3.3.

Advantages	Limitations
Can explore topics in more depth and detail, providing rich data	Lack of generalisability of the data collected
Few participants required	Conclusions need careful consideration – open to the researcher's interpretation
Highly flexible – can be adapted to meet the needs of the participants on an individual basis	Lack of reliability as results may differ when the research is repeated with different participants
Contextual information also gathered	

Table 3.3. Advantages and limitations of qualitative data collection methods

3.4.2.1. Development

When planning a focus group, Morgan (1996, p.31) asserts:

> *"the need to bring together several participants requires attention to who the participants are and how the researcher will interact with them as a group."*

This iterates the additional complexity in conducting qualitative research as a group rather than individually. Not only is the structure of the research important, but the interactions between participants and with the facilitator need careful additional consideration.

The nature of this research removes the decision between participants as strangers or acquaintances (Morgan, 1996). All participants were required to be EPs from the

same service. The impact of this is that acquaintances generally converse more readily about a topic, however, assumptions of knowledge may be made limiting the richness of data (Agar & MacDonald, 1995).

Cohen et al. (2013) indicate that between 8-10 participants per group provides the optimal level of discussion in a focus group. Smaller groups are more likely to be affected by participants who take a less active role and may not generate sufficient discussion for the research. However, they also offer participants greater opportunity to share views as the time is shared between fewer people. Larger groups can be more difficult to manage as a facilitator, with the potential for side conversations to occur and less airtime per individual, though offer a greater opportunity for discussion between participants. Due to the number of participants taking part in this research, I was able to arrange 8-9 participants per group across three focus groups, thus optimising the discussions.

In addition to the number of participants, the personalities of those in each group impact group cohesion and discussion. It is the role of the facilitator to manage a balance between the more and less vocal participants in the group. This raises an important consideration of facilitator qualities (Morgan, 1996). The facilitator must strike a balance between authority and facilitation in order to create an effective environment for helpful discussion to take place. In addition, as face-to-face focus groups cannot be anonymous, there is the potential for social impacts to distort the discussion. However, an additional role of the facilitator is to maximise disclosure whilst minimising status dynamics (Breakwell et al., 2006). Therefore, during the development of the focus groups it was considered important for the facilitator to

maintain a level of authority whilst utilising active listening techniques to ensure all participants felt valued and listened to.

A further aspect considered in the planning of the focus groups was the contrast between homogeneity and segmentation of participants (Morgan, 1996). This research holds a level of homogeneity in that all participants are EPs. However, the EPs in the service varied significantly in their experience of SCERTS. It was considered beneficial to the productivity of the discussions to minimise homogeneity of experience within each focus group. Morgan and Krueger (1993) raised the issue of EP status, asserting that mixing participants across levels of authority can result in non-disclosure and distortion of discussion, highlighting a potential benefit of segmentation. Within the focus EPS, the status of EPs is relatively flat, with team leads continuing to hold collegial practicing EP roles, reducing managerial tensions. This, combined with the uncontroversial subject matter, resulted in the decision for team leads to be mixed within groups, rather than segregated or removed from the research.

The practicalities of the focus group were also considered during the development stage. Barbour (2008) suggest these play a key role in the recruitment of participants. It was considered important for the ethics of the research that EPs were able to partake in the research during work hours without penalisation for either taking part or choosing not to. It was also important, for recruitment purposes given the nature of the geographically widespread team, that the focus group took place in a central location at a time of convenience to all EPs. Therefore, it was agreed with the principal EP that the focus groups would take place during a service-wide meeting, to allow all EPs to access the research conveniently without impacting on

their workloads. The principal EP offered an alternative activity for any EPs preferring not to take part in the research. As the focus groups took place during a single, time-limited meeting it was necessary to recruit additional facilitators to allow for concurrent running of focus groups. Two trainee EPs supported the facilitation of the focus groups in addition to myself as the lead researcher. In order to ensure the discussion was accurately documented each focus group was provided with an audio recording device.

Next, the structure of the focus group was considered in the development of the data collection tool. Focus groups can be structured, creating an environment which focuses directly on ensuring the research questions are answered, but limiting wider, potentially beneficial discussion. Alternatively, focus groups can be unstructured, presenting a topic for the participants to discuss with freedom to steer the discussion in any direction. This allows for true exploration, raising the aspects of value to the participants rather than those of value to the researcher. However, discussion may lead to extraneous data collection and can make data comparison across groups more difficult if different aspects are raised. This research had a clear aim: to understand the use and impact of SCERTS in EP practice. Therefore, the research required structure to ensure this was answered, and, being an exploratory project, a level of flexibility was also considered beneficial to best understand EPs perspectives of SCERTS in practice. Whilst a 'funnel' approach (Morgan, 1996) was considered, this depends heavily on the skills of the facilitator to implement. This approach allows for open discussion early in the focus group, whilst the facilitator slowly guides the participants to a more structured end point, taking the benefits of both structured and unstructured focus groups whilst minimising the limitations.

Overall, a structured approach, with a degree of freedom to allow for alternative discussions to take place, was considered most beneficial to this research. This was achieved through broad questions being posed and the allowance of tangent discussions relating to the SCERTS model and EP practice.

The findings of phase 1 of the research, the questionnaire, were examined, and further questions were brainstormed to structure the focus group. The aims of the questions developed at this stage were to clarify the information gathered through the questionnaires and to ensure both research questions were comprehensively answered. Eighteen questions were developed at this point in order to further the quantitative questionnaire responses through qualitatively exploring the use of SCERTS in EP practice (appendix 7). However, Krueger and Casey (2014) recommend considering the following when determining the length of time needed per question, and therefore how many questions are feasible in the allocated time (figure 3.1):

Factors to consider when creating a framework of focus group questions
❖ The complexity of the question ❖ The depth of question ❖ Participant level of expertise on the subject ❖ The size of the focus group ❖ The level of discussion required for the question

Figure 3.1. The factors to consider impacting on time when creating a framework of focus group questions (Krueger & Casey, 2014)

Ninety minutes were allocated in the meeting to the focus groups. Given time for setting up, clearing away, and introductions, the questions needed to fit approximately a one-hour timeslot. Therefore, the questions were reduced to four key areas: initial thoughts, use of SCERTS, multidisciplinary working, and other impacts (appendix 9). These were specifically chosen to clarify the use of SCERTS

in EP practice (RQ1), adding qualitative depth to the data gathered in phase 1 of the research, and also to gather more information relating to the impact of SCERTS on EP practice (RQ2), as the data was felt to be lacking in this area from phase 1 of the research. Table 3.4 presents the focus group questions in relation to the research questions. A brief introductory question aimed to generate discussion and create flow for the remainder of the questions (Murphy et al., 1992). Four broad questions were developed within the key areas based on the original 18 questions. This allowed approximately 15 minutes per question. An optional fifth question was included in the event that any focus group finished before the end of the allocated time. The final semi-structured focus group questions were confirmed through a piloting approach with an EP experienced in using SCERTS. This improved confidence in the validity of the questions.

Relevant Research Question	Focus Group Questions	Relevant Research Question
RQ2: What impact has the SCERTS approach had on EP practice?	1. After finding out about SCERTS what excited you most about the approach?	
	2. Discuss your perception of the advantages and disadvantages of the SCERTS approach in your practice.	**RQ1: How is the SCERTS approach used in EP practice?**
	3. Discuss the different ways in which you have used SCERTS in your practice – share what you have found works well and what worked less well.	
	4. How has learning about SCERTS changed the way you work with colleagues, from any background, including other EPs and other disciplines?	
	5. What are your reflections on the whole-team training approach, along with other professions, as opposed to training one/two specialists for the team?	
	(6. Thinking more broadly, what other impacts do you think there have been on your practice since learning about SCERTS?)	

Table 3.4. Relevance of focus group questions to the overarching research questions

3.4.2.2. Data Collection

Prior to the focus groups, during the service meeting, I presented a summary of the results from the questionnaire data. This generated interest in the topic and initiated discussions and reflections regarding the reasons why SCERTS is, or is not, used in various contexts. Following this presentation, 25 EPs consented to partake in the focus groups during the team meeting. This was more than the number of EPs partaking in the phase 1 questionnaires. The participants were divided in to three groups, with 8-9 participants per group, as deemed optimal for discussion generation (Cohen et al., 2013). Participants self-organised themselves into groups, given the condition that there must be a mixture of experiences of SCERTS within each group. The principal EP was given the opportunity to partake in the research, however, chose not to partake to allow for more open discussion (Morgan & Krueger, 1993).

Facilitator involvement in the focus group discussions was considered appropriate in two of the three focus groups where the facilitator was not the researcher and they met the inclusion criteria of the research. Facilitator involvement in the discussion was kept to a minimum in the focus group I led to minimise researcher bias. All three facilitators were able to request participants expand on answers, for example, “that’s interesting, can you tell me more about that?” I did not provide any personal or professional views in my focus group despite being a TEP using SCERTS in my practice, as this may have impacted the data. All three focus groups were audio recorded to accurately document the discussion in the group – these were then transcribed.

Morgan (1996) states that 3-5 focus groups is often sufficient for data collection in research. This is considered the ‘saturation point’, where more data is unlikely to generate more understanding about a topic. However, this is dependent upon other factors, such as: group size, facilitator involvement, and structure of questions. In this research the saturation point was considered to have been reached, therefore no further data collection was considered necessary.

3.5. Participants

3.5.1. The Context of the Service

The research took place in a large, shire county, local authority educational psychology service. The service employs a number of main grade qualified EPs, senior EPs, and specialist senior EPs, as well as trainee and assistant EPs. The service is led by a principal EP. The EPS operates a well-established traded service alongside local authority funded statutory work. The service also has a number of service level agreements with various agencies, delivering a diverse service across the county. The service invested in service-wide training in the SCERTS approach 1-2 years prior to this research taking place.

3.5.2. Recruitment

The study focused on a single EPS, recruiting EPs who had received training in the SCERTS approach. The research used opportune sampling within this service. The following steps were taken to improve participation in the research. The researcher:

1) Raised the prospect of the study with the principal EP for managerial support.
2) Raised the upcoming research in service meetings.

3) Emailed all EPs in the service providing information regarding the research aims and a full information sheet (see appendix 10).
4) Emailed the online questionnaire to all EPs in the service.
5) Emailed all EPs to thank those who had taken part and prompted any remaining EPs to partake should they wish. A reminder of the second phase of the research was highlighted at this stage.
6) Shared the questionnaire results with the EPS during a service meeting using a PowerPoint presentation to summarise the information. Introduced the focus group activity and provided EPs with the choice of participation.

Twenty-three EPs took part in the online questionnaires. Twenty-five EPs took part in the focus groups. The participants in the focus groups were divided in to three groups with 8-9 participants in each group.

The 23 questionnaire response forms were examined to ensure they met the inclusion criteria (table 3.5). Three participants did not meet the inclusion criteria, based on having no training and limited understanding of the SCERTS model, therefore this data was excluded. The remaining 20 responses were considered to meet the inclusion criteria. All the participants in the focus groups met the inclusion criteria, therefore no focus group data was excluded.

Inclusion Criteria	Exclusion Criteria
An EP (any stage of training)	Not a qualified, trainee, or assistant EP
Employed by/on placement with the service	Not employed by/on placement with the service
Trained in the SCERTS approach (formal, informal, self-trained)	No prior knowledge of the SCERTS model

Table 3.5. Inclusion and exclusion criteria

3.5.3. Sample Demographics

Participant demographic information was formally collected in the questionnaire – this is presented with the questionnaire results in Chapter 4. No formal participant demographics were collected during the focus groups, however, it was noted that a mix of qualified EPs, specialist/senior EPs, trainee EPs and assistant EPs took part in this phase of the research.

As participation in the questionnaire was anonymous and no data was collected regarding those who did not take part, it is possible there was a response bias in the questionnaire data collection. In addition, as the focus groups were held on one day during a service meeting, some EPs were not present at this meeting and therefore did not have the opportunity to take part. As a result, there may be key information missed in this research.

3.6 Ethical Considerations

The research was considered by the Research Committee at the University of Birmingham who approved the application (appendix 8).

Information sheets (appendix 10 and 11) were circulated prior to the first phase of the research taking place to allow participants to make an informed decision on their participation. Confidentiality (BPS Code of Ethics and Conduct, 2018), audio recording, and data storage procedures were shared with the participants in the information sheets. The limits to confidentiality were where there may be risk to the participant or other individuals not involved in the research. Participants were made aware of this before giving their consent. It was not anticipated that there would be

any physical or emotional risks to the researcher, participants, or other individuals not involved in this research.

Initially verbal consent was gained from the principal EP for the research to take place in the service. EPs who wanted to take part in the research were asked to provide written consent (appendix 12) for each phase of the research, as EPs were not required to partake in both.

All participants were reminded that taking part in the research would be their own decision and they would have the right to withdraw at any time before or during the study (BPS Code of Ethics and Conduct, 2018). Participants were made aware that they were unable to withdraw following the completion of the questionnaire, or following the transcription of the focus group data, as the data was anonymous and therefore could not be traced back to them.

The focus groups were conducted on service premises during working hours to ensure there was no personal penalty for partaking in the research. As the audio-recordings of the focus groups contained personally identifiable information (voices and names) these were held on an encrypted device and listened to and transcribed by the researcher only. The transcriptions of the focus groups were labelled with group numbers and each participant was designated a letter. Any names raised during the discussion were redacted or given a pseudonym in the transcriptions.

As face-to-face focus groups are not anonymous the ethical issue of sharing information between participants was raised (Morgan, 1996). This was highlighted with the participants prior to consenting to partake. All participants verbally consented to this sharing of information amongst participants.

Finally, the service partaking in the research is not named in the written account of this research and will be referred to as ‘a shire county EPS’ to ensure anonymity.

3.7. Data Analysis

3.7.1 Phase One: Questionnaire Data

Tukey (1977) founded a strategy of data analysis known as exploratory data analysis (EDA). This strategy asserts that the focus of the analysis should be on understanding the data collected rather than inferring probabilities of future outcomes from the data. This approach uses data re-expression and data visualisation techniques to understand the patterns occurring in the data gathered (Behrens et al., 2013).

A strength of this approach is that it reduces the likelihood of confirmation bias by encouraging an exploratory approach to the research rather than seeking to confirm a predetermined hypothesis (Tukey, 1977). Tukey iterates that certainty is often considered important in research, particularly in positivist studies, however he states that “*statistics has made its greatest progress by having to move away from certainty*” (Tukey, 1967, p.lviii). Yu (2006) developed this, explaining that EDA is rooted in abductive reasoning. That is, data is observed and explanations are proposed (Josephson and Josephson, 1996), or, as Denzin (2017) described, working backwards from a consequence to suggest a cause. Tukey (1977) likens EDA to detective work: building a picture in order to develop an understanding of the situation. In contrast, he likens more traditional quantitative statistical analyses to the judicial system: evaluating the strength of the data in relation to a hypothesis.

EDA attends to what is relevant to progress the research, rather than attending to all that emerges from the data (Yu, DiGangi & Jannasch-Pennell, 2008).

This method of quantitative analysis fits neatly with the pragmatic approach adopted by this research and the exploratory nature of the research questions. As the questionnaire data was predominantly quantitative and categorical, the EDA techniques of re-expressing and visualising the data were considered appropriate for the analysis of this data. The following steps were used (figure 3.2):

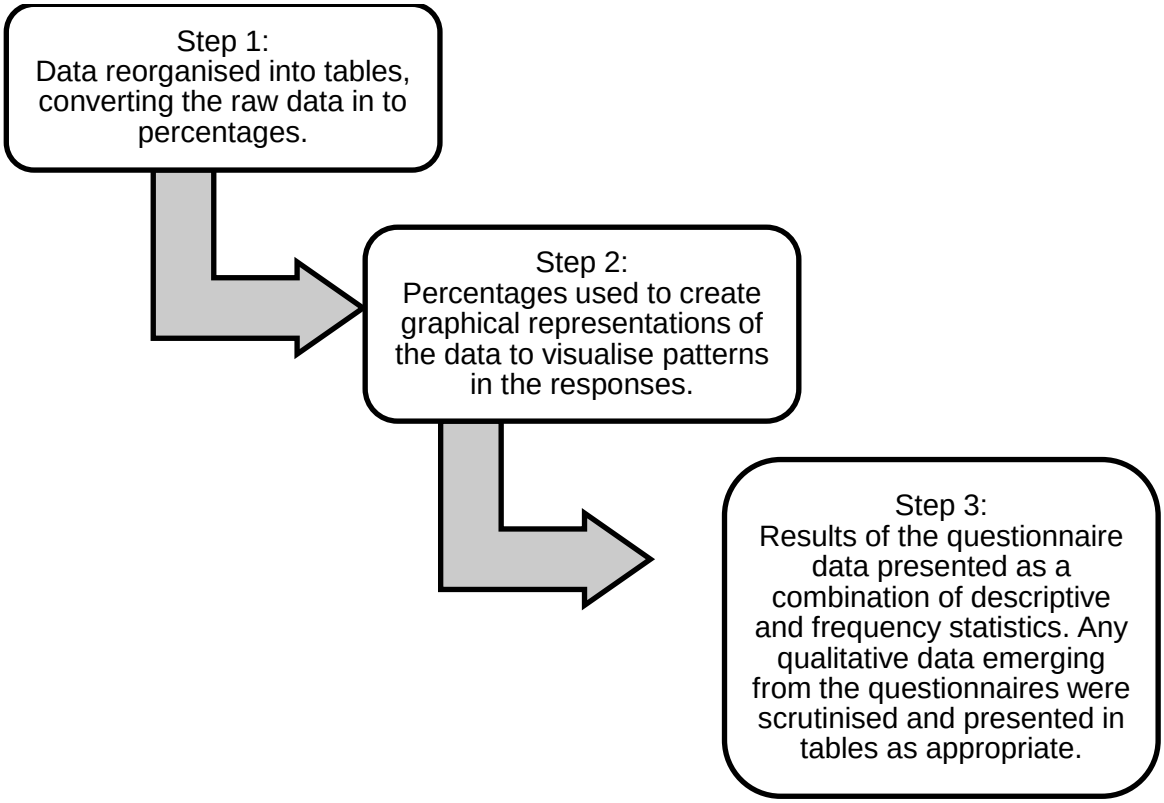


Figure 3.2. EDA steps of data analysis

Microsoft Excel software was used to achieve the graphical representation of the data. The results of the questionnaire data are presented in the subsequent 'Results' section (Chapter 4) with the additional tables included in appendix 13. From the results, explanations are then suggested in the 'Discussion' chapter (Chapter 5) to create an understanding of the data.

3.7.2 Phase Two: Focus Group Data

In order to further the questionnaire data, the purpose of the focus groups was to explore and understand the use of SCERTS in this EPS. It was not to confirm a proposed hypothesis.

Qualitative research is defined by Nkwi, Nyamongo, and Ryan (2001, p.1) as "*any research that uses data that do not indicate ordinal values*", such as discussions held in focus groups. Thematic analysis (TA) (Braun & Clarke, 2006) encompasses a range of analytical techniques, creating a flexible approach to explore qualitative data, identifying and reporting patterns (Guest, MacQueen & Namey, 2012). TA uses a coding mechanism to link raw verbatim data with broader, significant themes. Through this TA aims to present the experiences of the participants in a clear and succinct format (Guest et al., 2012). It does not align itself with any epistemological position, therefore can be used flexibly to create a detailed account of the data in a variety of formats (Braun & Clarke, 2006).

As TA is a broad term, further forms of TA were considered for this research. Template analysis is a form of TA which has been used widely in organisational research, however, is less used in psychology (King, 2012). Key to this approach is the coding template which is developed early in the analysis procedure (Brooks et al., 2015). This creates structure within the disorganised raw data. However, the approach continues to hold the flexible stance central to TA. The coding template is revised and refined throughout the analysis, creating an iterative process. This establishes a sense of organisation without restricting the researcher. The researcher is encouraged to develop the themes throughout the analysis, particularly where there is rich data. This links with a hierarchical aspect to coding

as a further key feature of the approach (Brooks et al., 2015; Lewins & Silver, 2007). As a result, the qualitative data analysis was both deductive and inductive.

Saldaña (2015) explores various approaches to coding in-depth, many of which are compatible with the TA approach. Structural coding lends itself well to the template analysis form of TA. This approach uses codes which relate specifically to the research questions to guide the structure of the analysis (Guest, MacQueen & Namey, 2012; Namey et al., 2008). This may involve using the interview schedule to create a template of codes to guide the analysis prior to commencing coding. Structural coding also utilises a hierarchical approach, creating an index of subthemes within a broader theme responding to the research question (Saldaña, 2015). Figure 3.3 illustrates the tiered relationship between TA, template analysis, and structural coding.

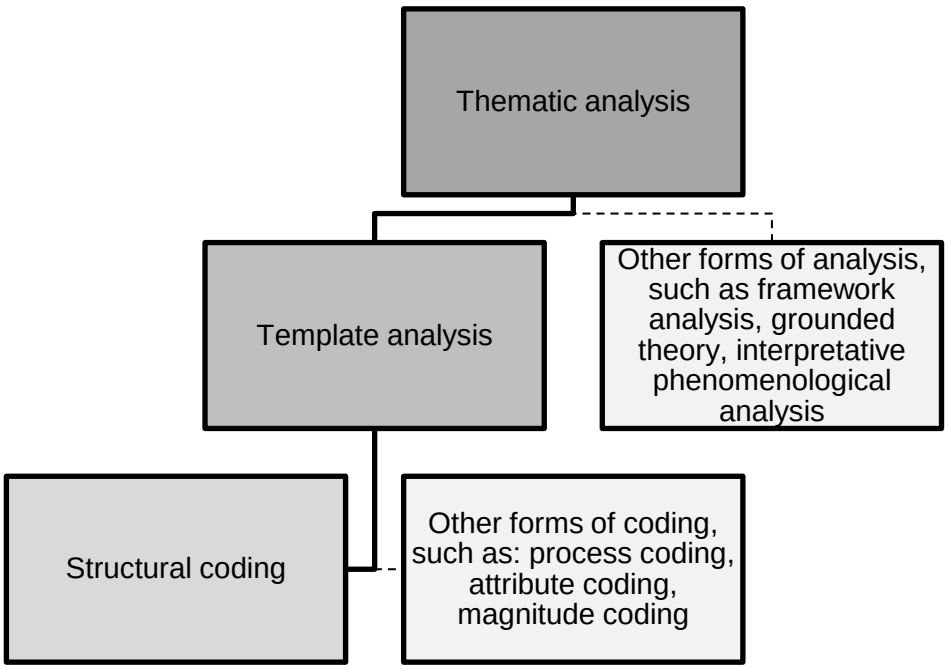
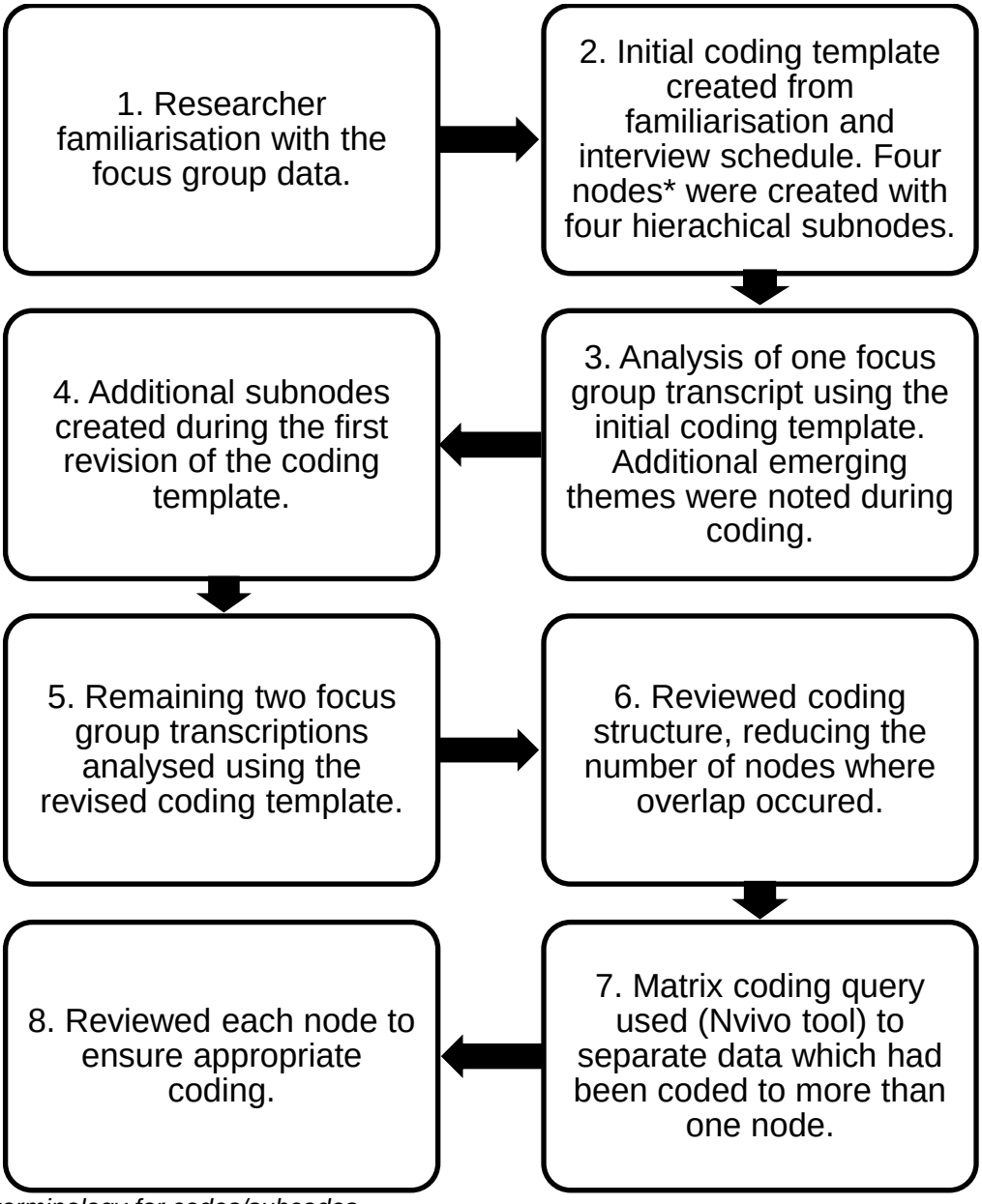


Figure 3.3. Tiered relationship between types of analysis and coding techniques

Template analysis, with structural coding, was considered a pragmatic and flexible approach to qualitative analysis and, therefore, was used to guide the analysis of the focus group data in this research. The following steps were taken using Nvivo software (figure 3.4):



** Nvivo terminology for codes/subcodes.*

Figure 3.4. Thematic analysis steps

Further detail regarding the development and refinement of individual themes during the analysis is provided in appendix 13.

3.8. Reporting the Findings

The results are presented in Chapter 4. Results are presented by phase due to the differing nature of the analyses. They are then combined and discussed by theme, in relation to the research questions, in Chapter 5.

CHAPTER FOUR

RESULTS

4.1 Overview of Chapter Four

This chapter presents the results of the two phases of the study – the questionnaire data and focus group data – answering the two research questions:

RQ1: How is the SCERTS approach used in EP practice?

RQ2: What impact has the SCERTS approach had on EP practice?

The results of the questionnaire data are presented by frequency statistics which present the use of the SCERTS approach in this particular EPS following whole-service training.

The results of the focus groups are presented thematically, highlighting the various themes emerging from the discussions held by the participants in this study.

4.2 Phase One: Questionnaire Results

The questionnaire results are described and presented in charts. Tables 1-18 illustrate the number of participants responding to each question. These are presented in appendix 14.

4.2.1. Demographics

The participant demographics are presented in Figures 4.1, 4.2, and 4.3: the professional status of respondents, the type of SCERTS training received, and the recency of training, respectively.

Sixty percent of respondents were main grade qualified EPs; 20% held assistant or trainee status; 15% had senior or principal status (Figure 4.1).

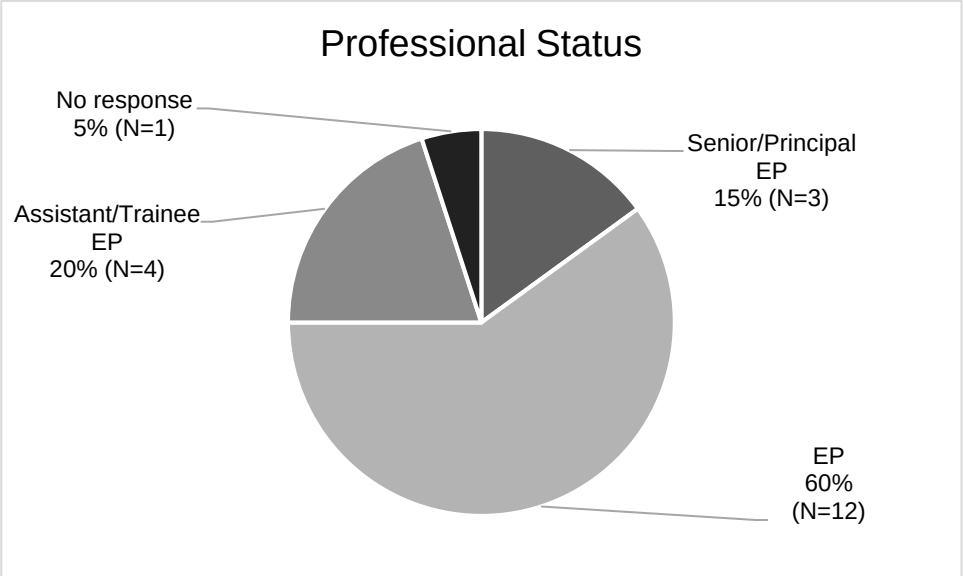


Figure 4.1. Professional status of respondents

The majority (85%) of respondents had attended a formal two-day training course led by an author of the SCERTS approach, and the remaining 15% of respondents received variations of this training (Figure 4.2).

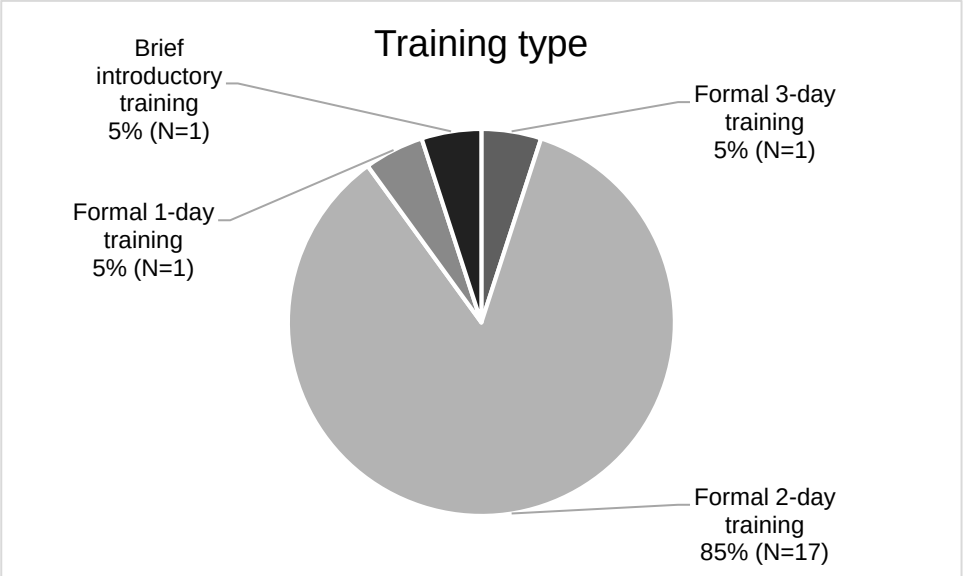


Figure 4.2. Type of training received by the EPs

Sixty percent of respondents received training over a year before the research took place and 35% received their training approximately 6 months – 1 year prior to the research taking place. No participants reported that they had received the training more recently than this (Figure 4.3).

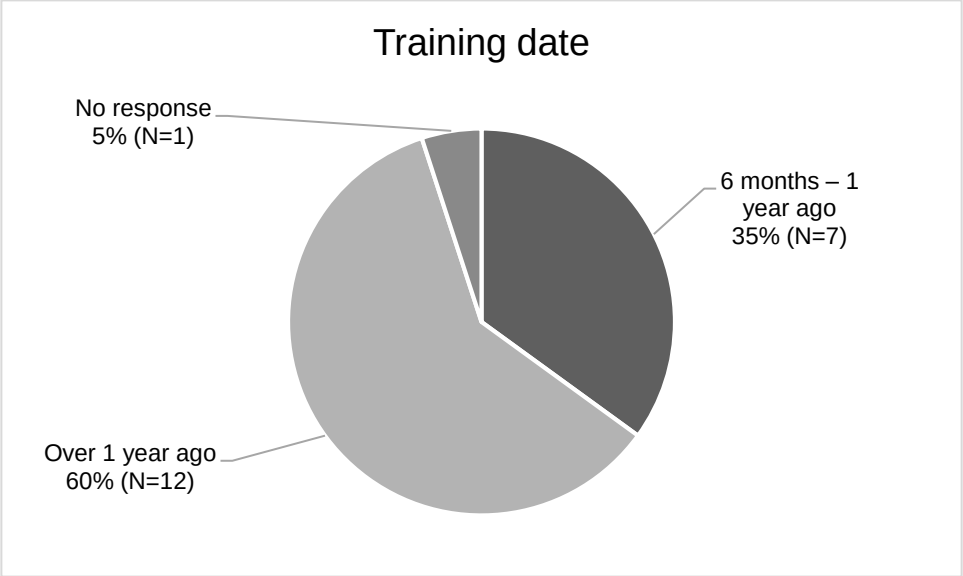


Figure 4.3. Recency of training of EPs in the SCERTS approach

4.2.2. Use of the SCERTS Approach in EP Practice

Participants were asked how (Figure 4.4) and how often (Figure 4.5) the SCERTS approach had been used in their practice. Eighty-five percent of respondents reported they had utilised the observation tools in their practice since training. Other common elements of the SCERTS approach used were: the principles of the approach in practice (65%), information gathering questionnaires (60%), and using the theory underpinning the SCERTS model in guiding formulation (60%).

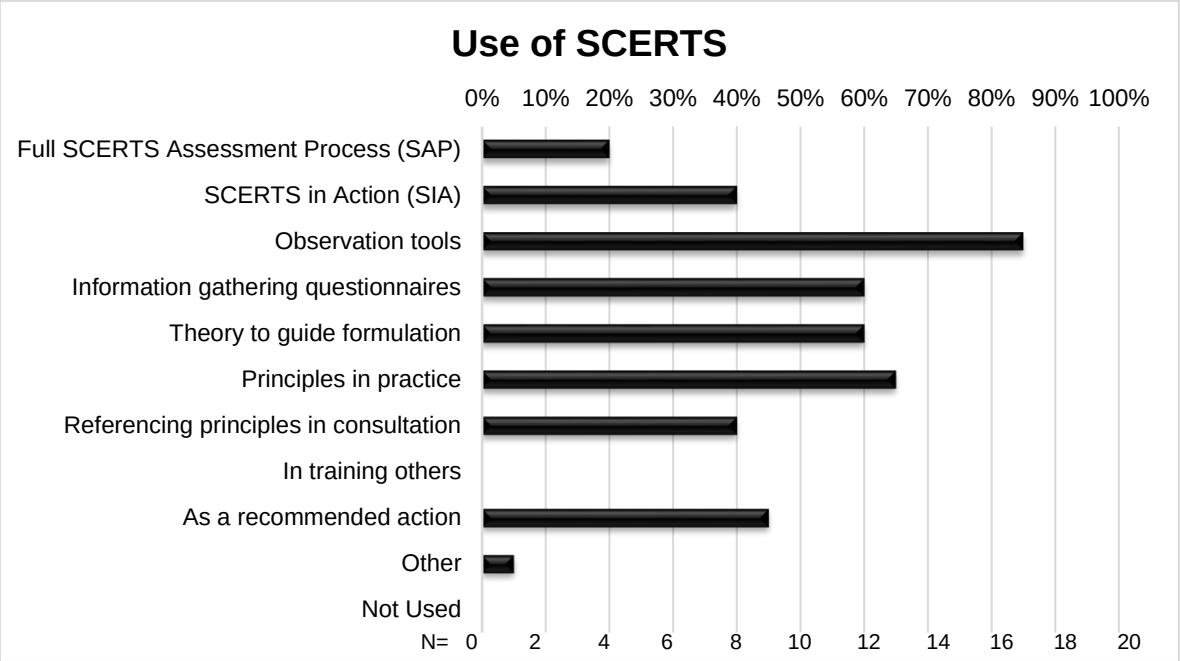


Figure 4.4. EP use of the SCERTS approach in practice

EPs reported on the regularity of their use of the SCERTS approach, in any form, in their professional work. The modal group (40%) reported using SCERTS every couple of months. However, the frequency varied widely, with some (10%) respondents drawing on the approach at least weekly, to some using it less than once a year or not at all. The spread of responses do not fit a normative curve (Figure 4.5).

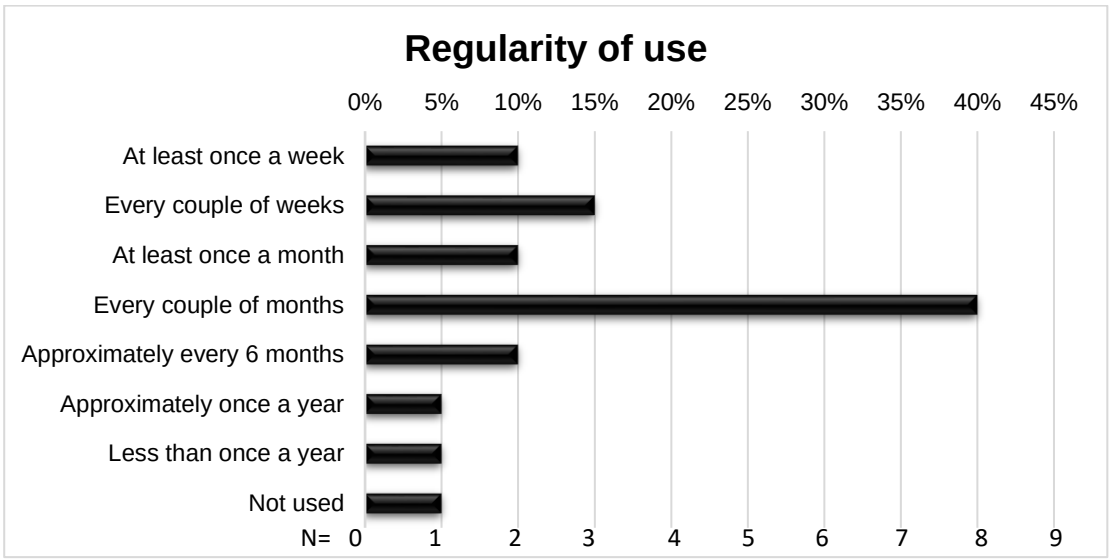


Figure 4.5. Regularity of EP use of the SCERTS approach in practice

4.2.3. Reviews

Forty percent of responding EPs (N=8) reported having reviewed at least one case following an initial SCERTS assessment (Figure 4.6). Of these reviews, the frequency of the review period varied from half-termly to annually (Figure 4.7).

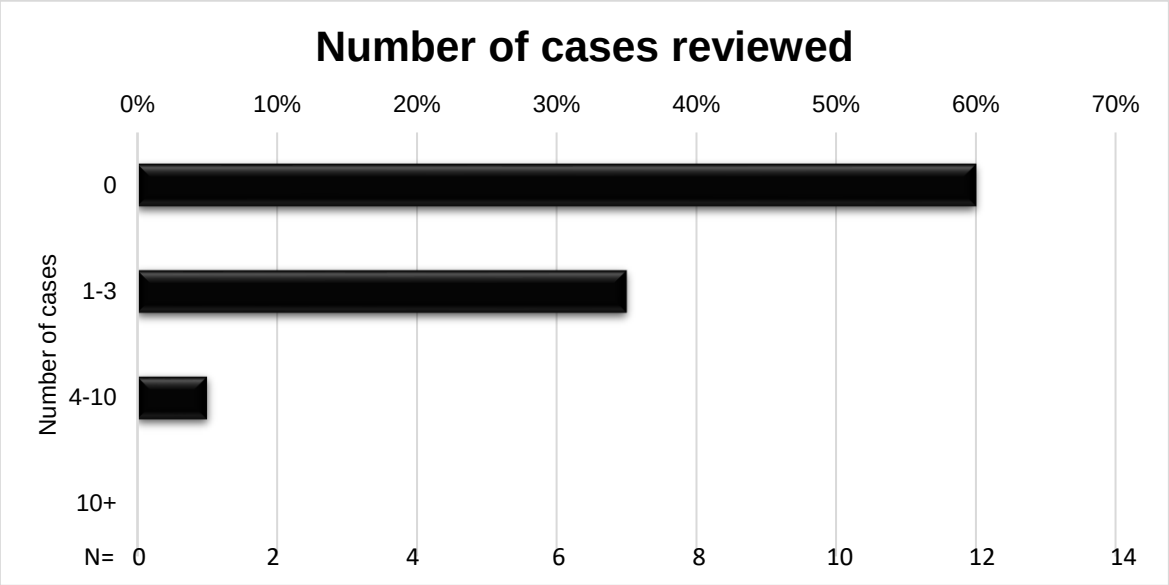


Figure 4.6. Number of cases reviewed by EPs

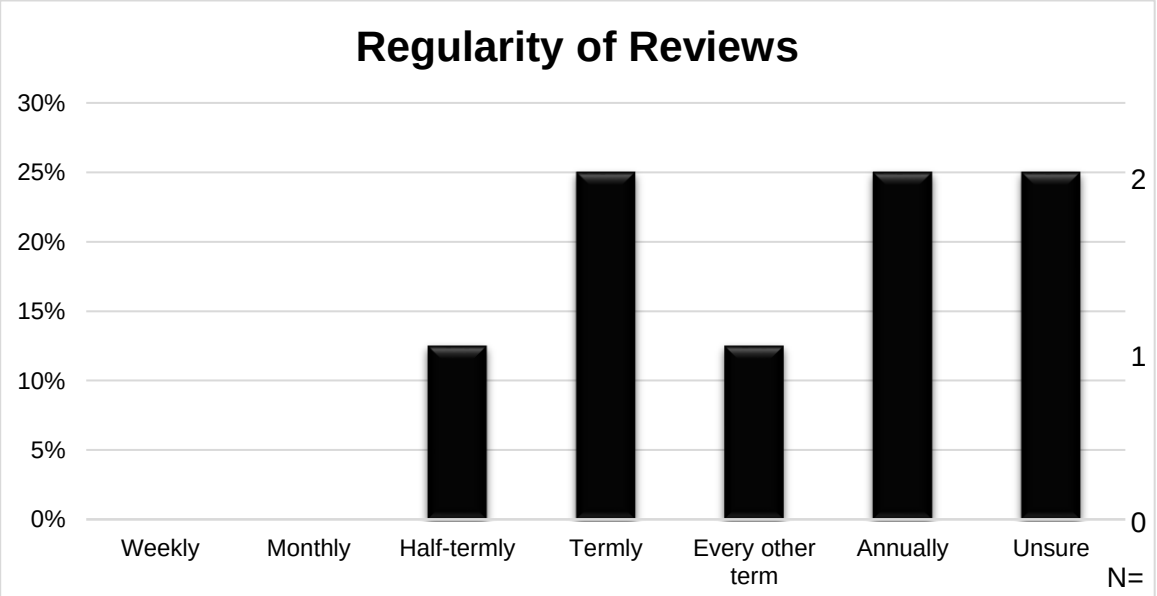


Figure 4.7. Regularity of reviews by EPs who have conducted reviews

4.2.4. Type of Work

Seventy-five percent of EPs reported having used the SCERTS approach during traded work (work funded externally to the local authority, often by an educational provision). Seventy percent of EPs reported using the approach during statutory work (work funded by the local authority, often as part of an EHCNA). Thirty-five percent of EPs reported using the approach in tribunal work or in potential tribunal cases (Figure 4.8).

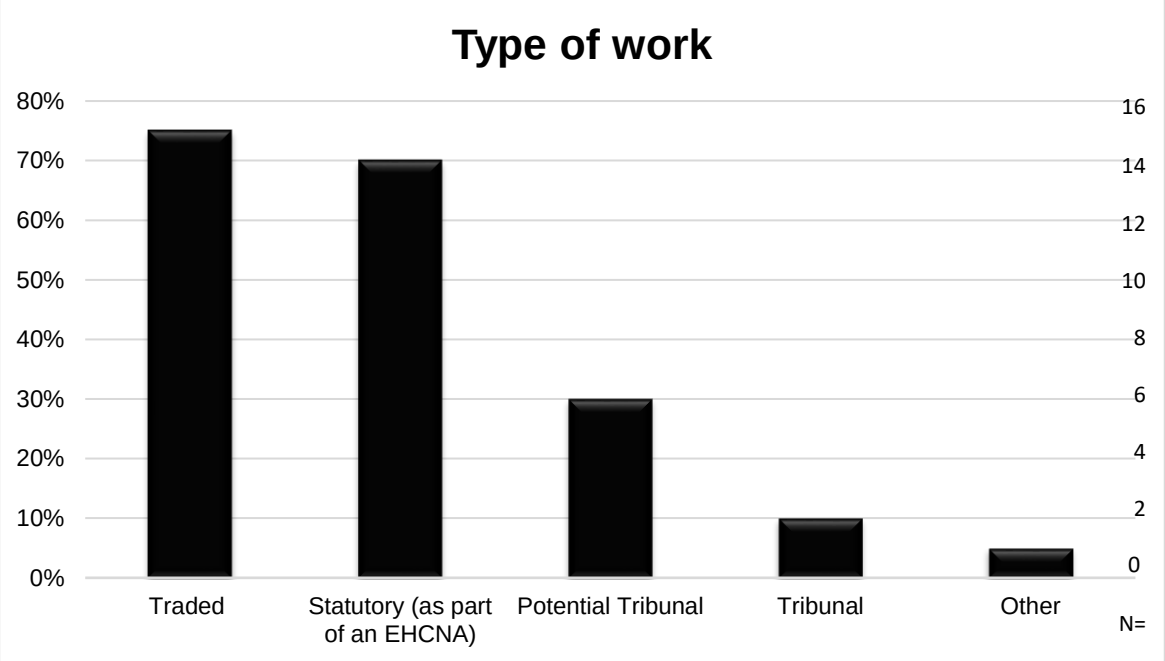


Figure 4.8. Type of work when the SCERTS approach has been used

Assuming the child's needs were in line with those supported by the SCERTS model, EPs generally reported that they would consider using the SCERTS approach in the future. Figure 4.9 demonstrates the range of work under which EPs would consider using different elements of the SCERTS approach. Only one EP elected not to respond to this question, and one participant's data was disregarded as responses were conflicting, reporting both 'no future use' and 'future use'.

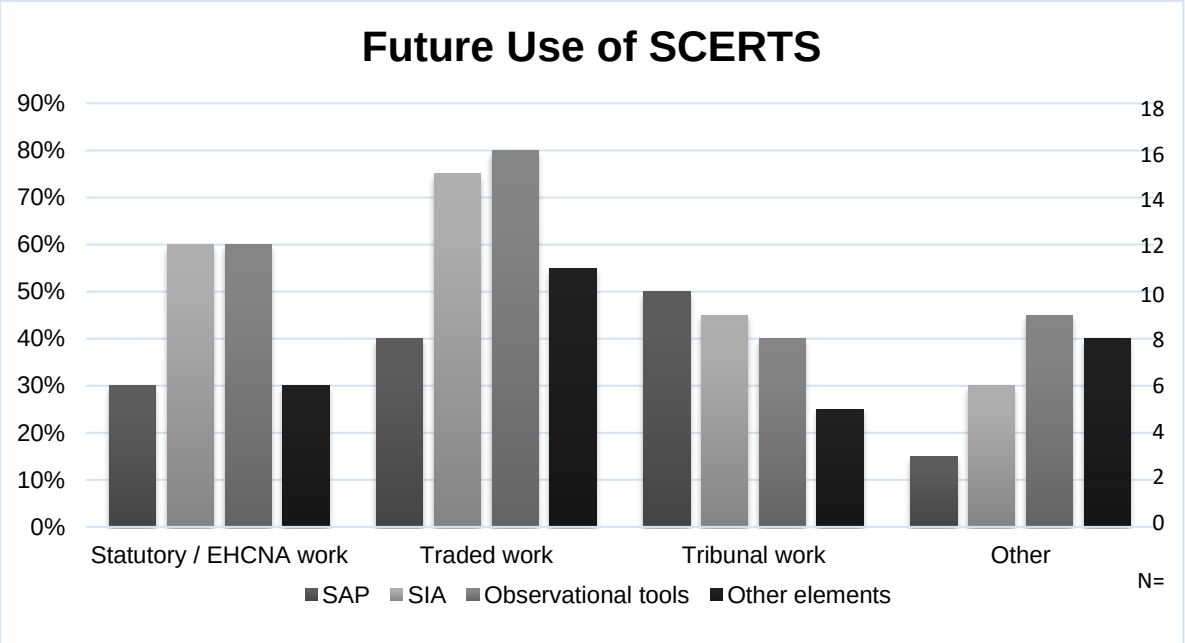


Figure 4.9. Type of work where EPs would consider using elements of the SCERTS approach in future practice

4.2.5 Professional Collaboration and *Multidisciplinary Working*

Eighty-five percent of EPs reported they had collaborated with another professional at some point when using the SCERTS approach – 5% did not respond and 10% reported no collaborations (Figure 4.9). Fifty percent of respondents reported they had collaborated with another EP when using the approach. However, this is not considered multidisciplinary working. Outside of EP collaboration, 60% of respondents reported multidisciplinary working when using the SCERTS approach. Thirty-five percent of respondents had worked collaboratively with a speech and language therapist, 35% had used the SCERTS approach with an early-years professional, and 30% had collaborated with a school-based teacher. No EPs reported collaborating with occupational therapists, despite some occupational therapists attending the same training sessions as the majority of EPs.

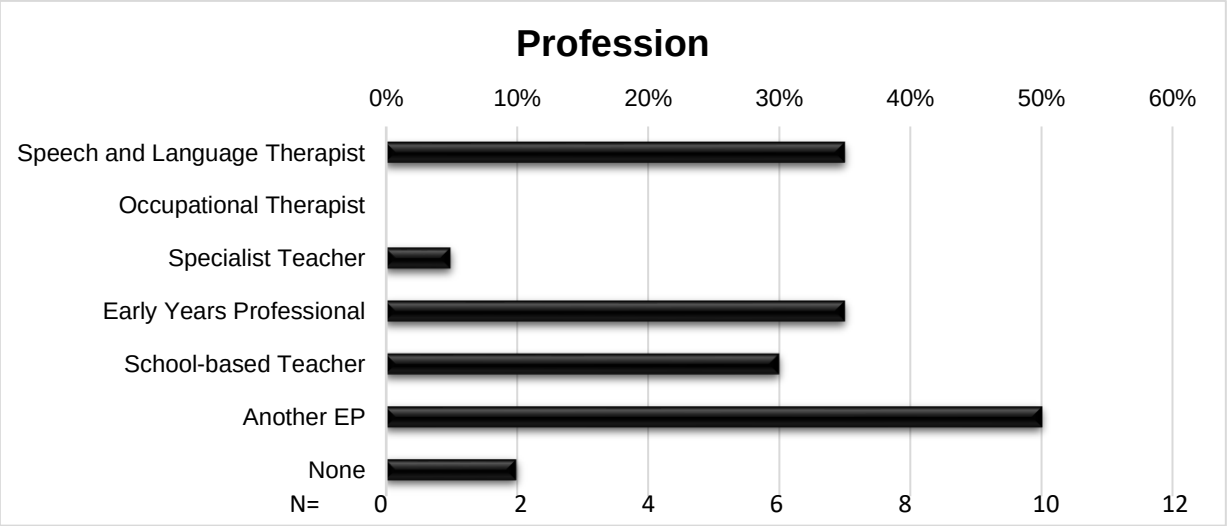


Figure 4.10. Collaboration across professional disciplines

4.2.6. Child Profiles

Eighty percent of EPs reported they had used SCERTS with children aged between 3-5 years (Figure 4.11). Half of the EPs reported they had also used the approach with children aged between 6-8 years, with the regularity of use reducing consistently as the age of the child increased. Only 10% of EPs reported they had used the approach with young people aged 15-17 years old, and none had used the approach with young people aged over 18 years old.

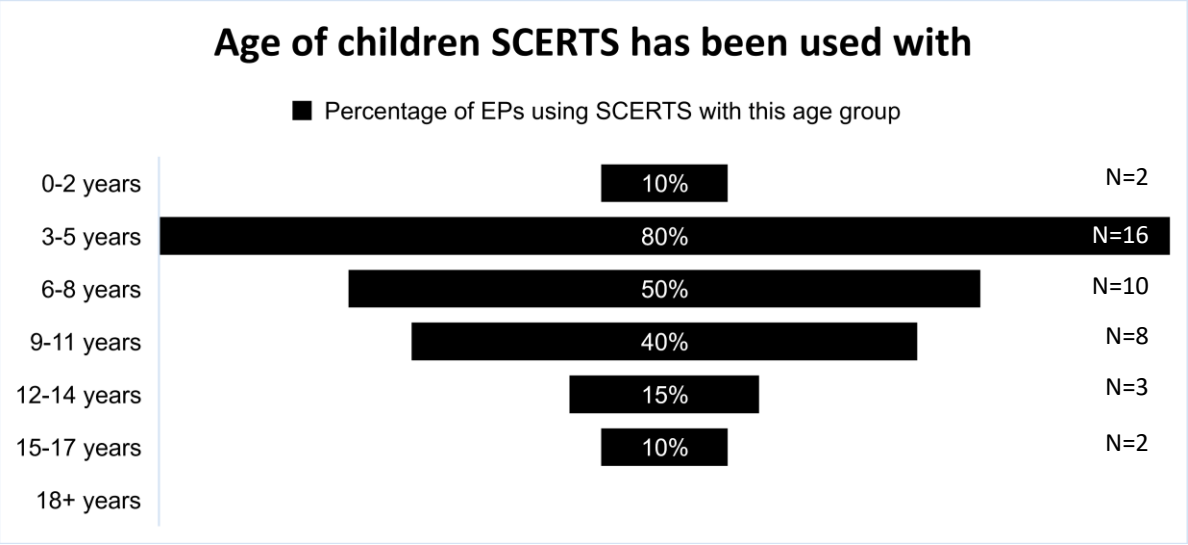


Figure 4.11. Age of children with whom the responding EPs have used the SCERTS approach with

All 20 EPs reported that, when they had used the approach, it had been with a child with either a diagnosis of autism or with social communication difficulties (SCD). Ninety percent of EPs had used SCERTS when working with a child with a diagnosis of autism and 55% had used the approach with a child with SCD without a formal autism diagnosis, indicating that some EPs had used the approach with more than one child with different needs. Fewer EPs had used the approach with children with speech and language difficulties (25%) or learning disabilities (15%). It is not possible to determine from the data whether these children also had a diagnosis of autism or SCD, or whether these difficulties were exclusive. Use of the approach with other needs, such as attachment or other social or emotional needs, were not reported (Figure 4.12).

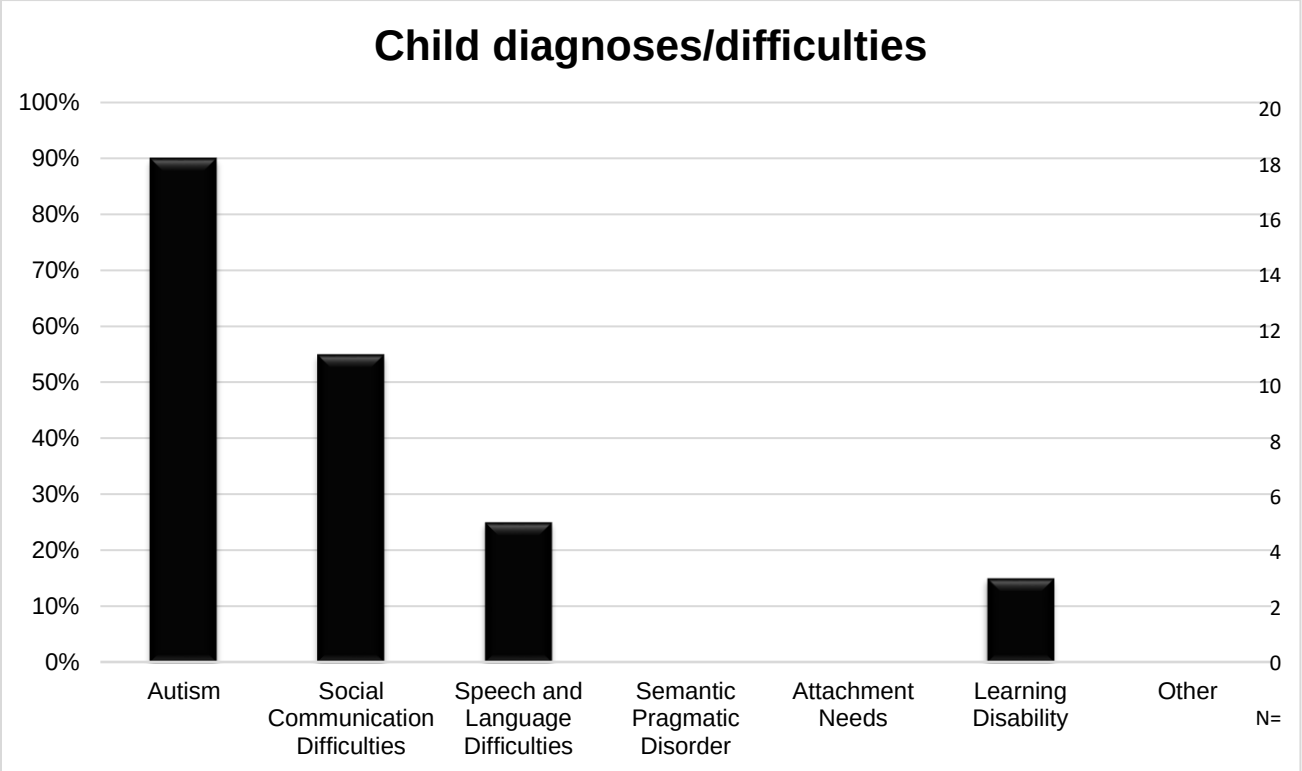


Figure 4.12. Child needs when using the SCERTS approach

The SCERTS approach can be used at any developmental stage. However, the model splits child development into three identifiable stages based on the child's language use (see Chapter 2 for more information). Figure 4.13a. illustrates the frequency of use of the approach with children at each developmental stage. Between 30%-40% of EPs (N=6-8) did not respond to this question for each developmental stage. The majority of EPs reported low levels of use with between 1-3 children at each developmental stage. No EPs reported using the approach with more than 10 children in any developmental stage. Figure 4.13b. illustrates the spread of use across the three developmental stages.

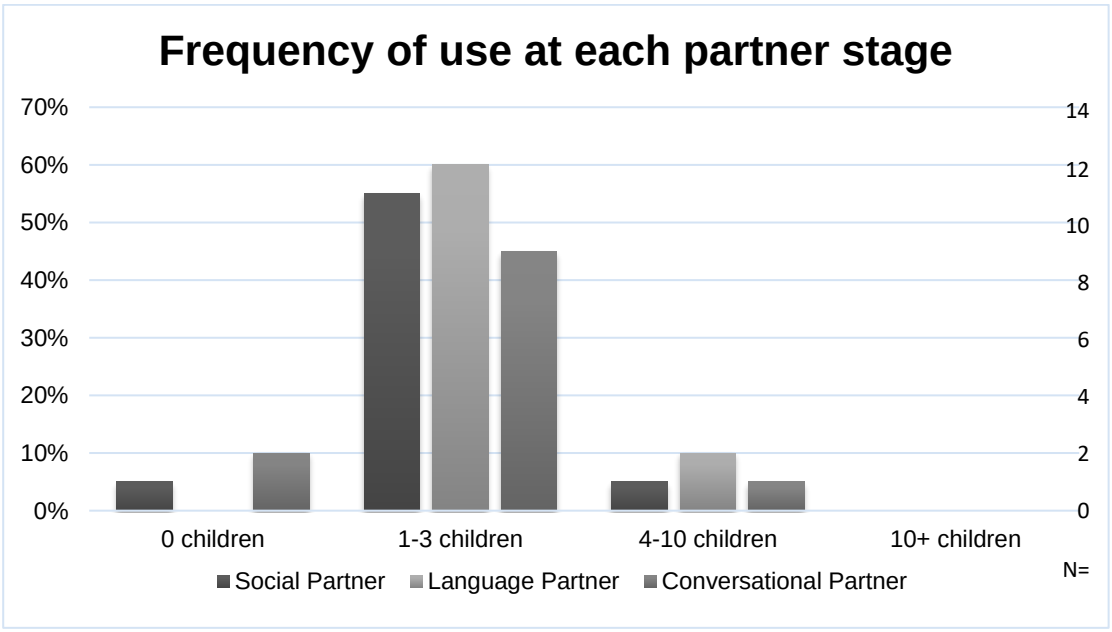


Figure 4.13a. Frequency of use of the SCERTS approach at each partner stage

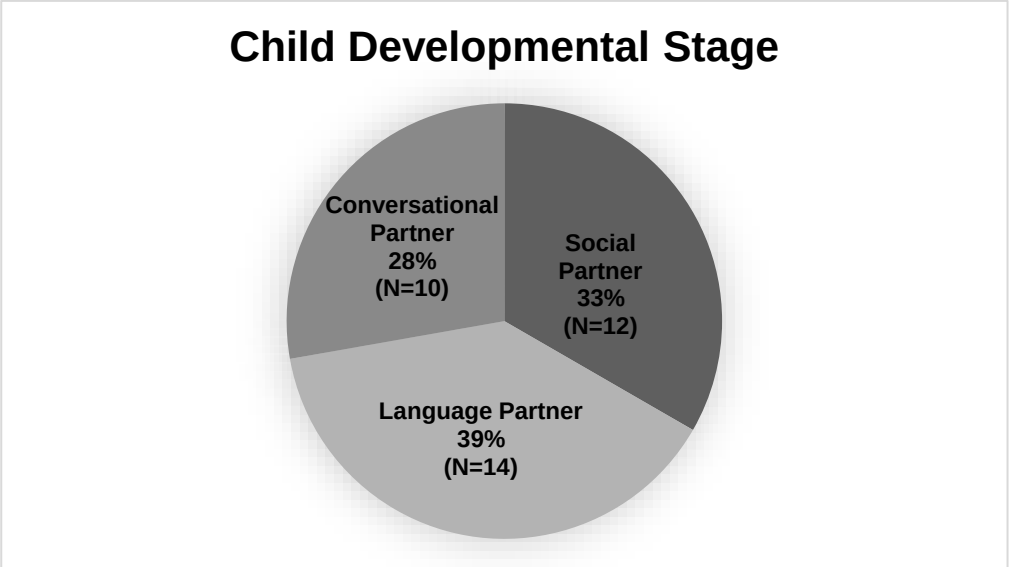


Figure 4.13b. Use of the SCERTS approach at each developmental stage

4.2.7. Understanding and Confidence

Overall, the majority (80%) of EPs reported having a similar or greater understanding of the child's needs using the SCERTS approach compared to other methods of assessment typically used. Ten percent reported a less comprehensive understanding of the child's needs (Figure 4.14).

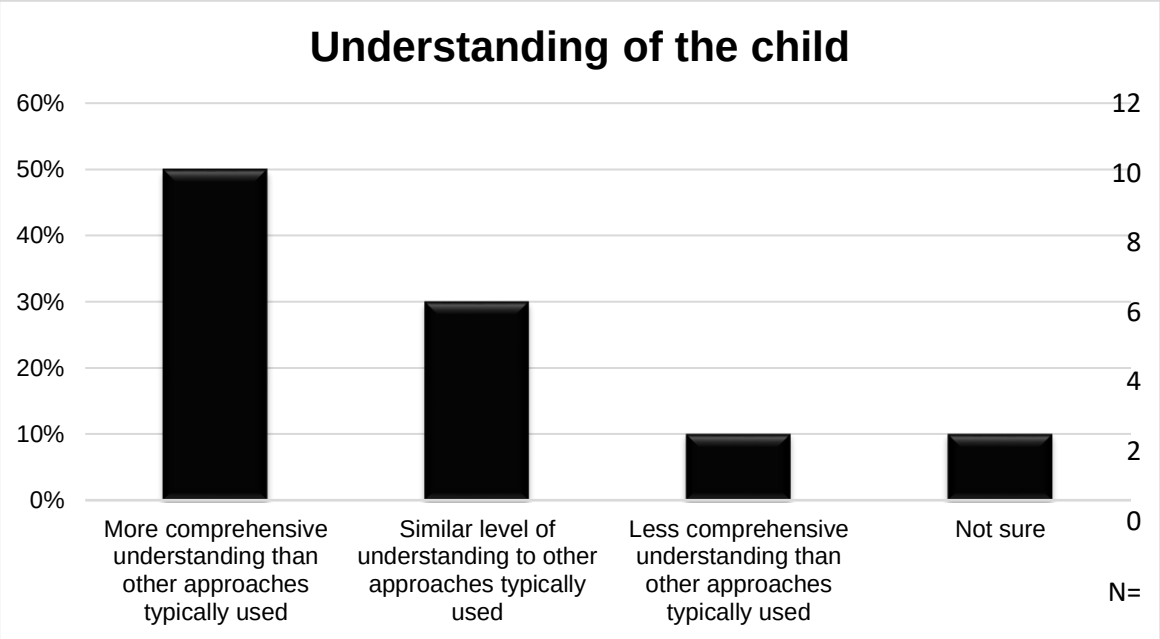


Figure 4.14. EP level of understanding of the child's needs when using the SCERTS approach, compared with other approaches typically used

After a SCERTS assessment EPs would be expected to agree recommendations for intervention and support. Overall, the majority (60%) of EPs reported feeling more confident in their choice of intervention or support following the use of SCERTS, compared to alternative assessment tools typically used, with 20% reporting similar levels of confidence to other approaches (Figure 4.15). Only 10% reported feeling less confident in their recommendations following the use of the SCERTS approach. Table 4.1 summarises the key reasons given for EP level of confidence. The individual responses can be found in appendix 14, table 15b.

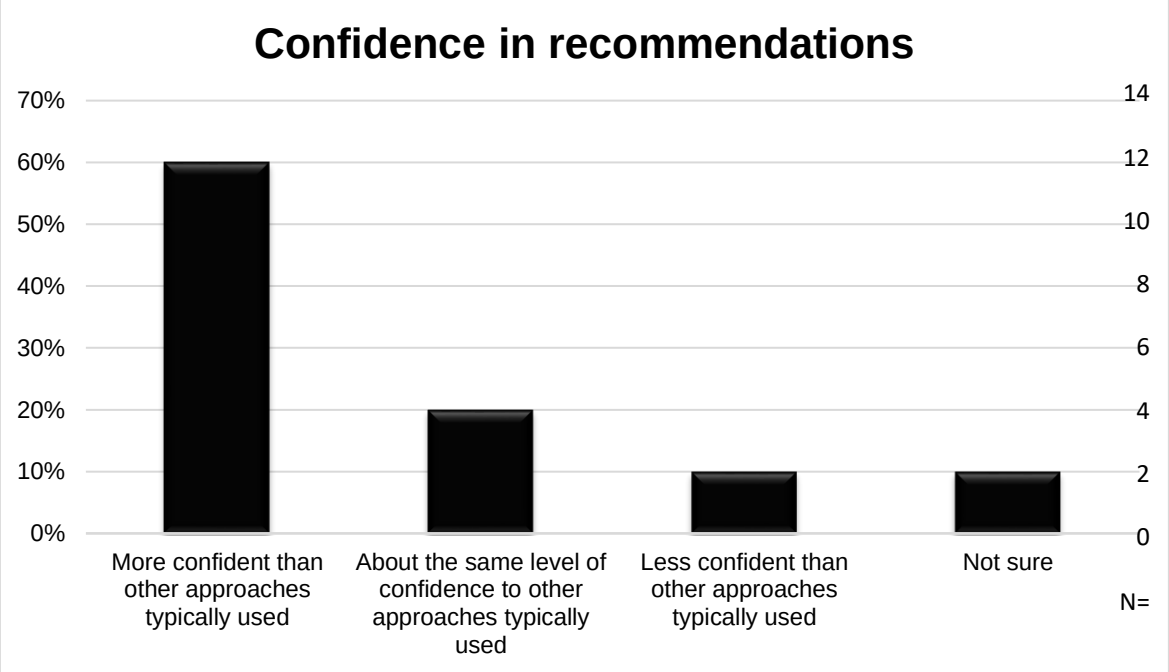


Figure 4.15. EP level of confidence in recommendations after using the SCERTS approach compared with other approaches typically used

	Reason
More confident	• Structured, systematic, thorough approach improving the understanding of the child's needs (working in the child's zone of proximal development[1]) • Psychological principles underpinning the approach improving rationale for recommendations made • Next steps can be drawn directly from manual • Strong evidence base improves ability to defend recommendations • Collaborative working and multiple viewpoints
Unsure	• Lack of use in professional practice • Difficulties translating the assessment into practical actions
Less confident	• Lack of clarity regarding findings from the assessment • Need for further training • Lack of regular use since training and time lapse since training

Table 4.1. Summary of key reasons given for level of confidence in using the SCERTS approach

Having used the approach in professional practice, 60% of EPs reported feeling 'confident' or 'somewhat confident' in using the approach again in the future. Thirty percent of EPs reported feeling 'apprehensive' or 'somewhat apprehensive' about using it in the future (Figure 4.16).

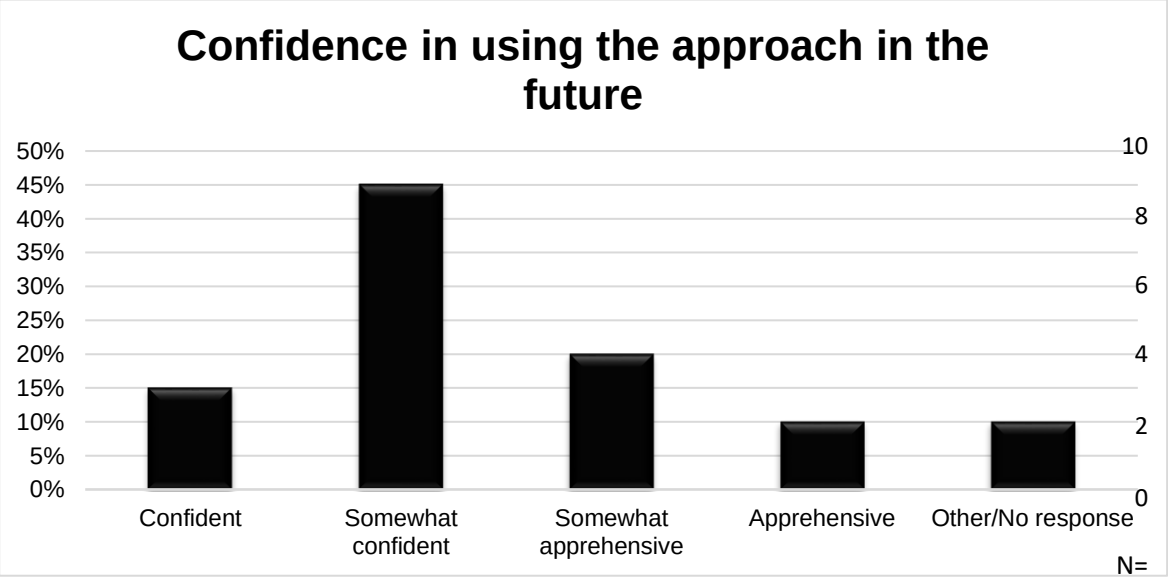


Figure 4.16. EP confidence levels in applying the approach in the future

[1] Zone of Proximal Development is a concept described by Vygotsky (1978) – reference available for further information.

4.2.8. Barriers to use of the SCERTS Approach

The majority of EPs (85%) reported that time constraints were a key factor in why they did not use the approach more often in their practice (Figure 4.17). Forty-five percent of EPs reported difficulties working collaboratively as a key barrier and 35% reported not yet feeling confident in carrying out a SCERTS assessment. Only 10% of EPs reported that the approach was not appropriate for the children they work with, hence a barrier to drawing on the approach.

Whilst 8 EPs (40%) originally reported 'other' barriers to using the approach, 7 of the 8 descriptions closely matched one of the other categories presented. For example: "*Once I have done more full assessments I am sure I will use it more. As it is a new approach it takes time to be confident in delivering it*" ('confidence') and "*Time and difficulties with other professionals when doing the full assessment but there are lots of parts of the SCERTS that you can do by yourself*" ('time constraints' and 'difficulties working with other professionals'). These were absorbed into the appropriate categories (see appendix 14, table 17b, for description of reassignments).

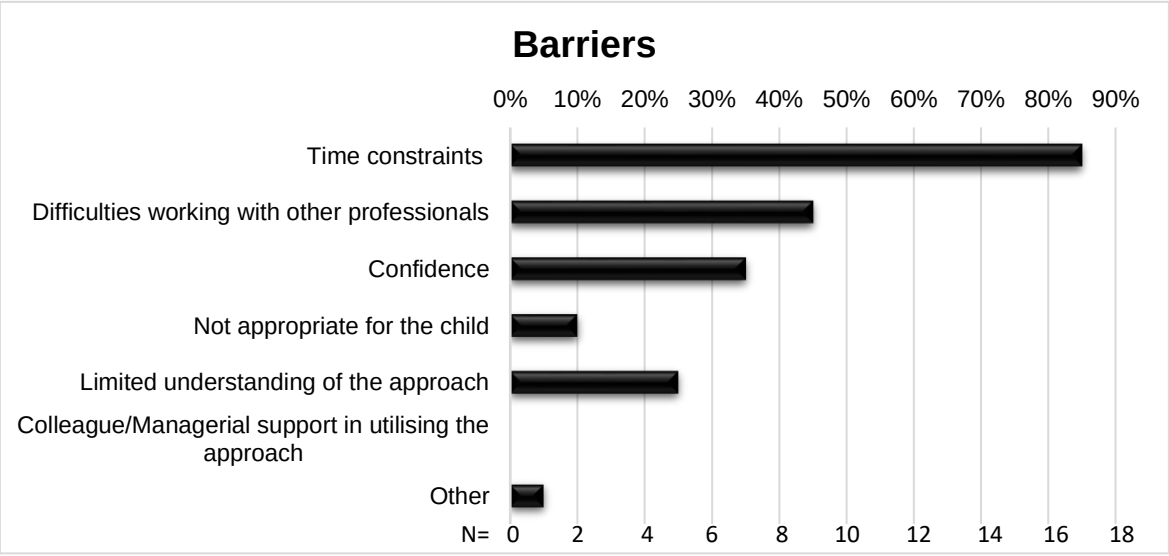


Figure 4.17. Perceived barriers to using the SCERTS approach in EP practice

4.2.9. Going Forward

Seventy-five percent of EPs wanted more ideas on how to use SCERTS in limited time scales or in alternative ways. Of those who did not choose these as factors, 15% wanted more training, and 10% wanted more support from others. EPs were able to choose up to two factors to enhance the use of SCERTS in their practice – Figure 4.18 illustrates the overall percentage of EPs reporting each factor. Two EPs reported 'Other' reasons – see Table 4.2.

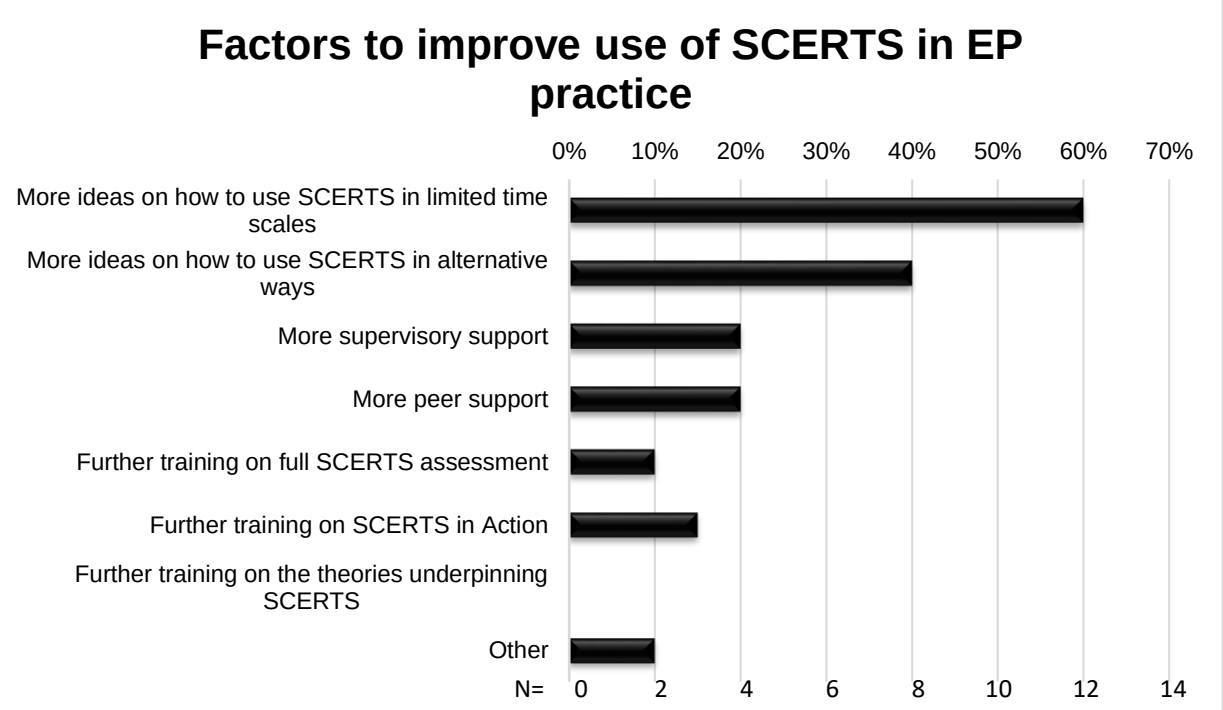


Figure 4.18. Factors reported by EPs as potentially beneficial in enhancing their use of SCERTS in professional practice

'Other' responses to improving the use of SCERTS in EP practice:
"Having more time to complete the assessment, score the assessment and write up a joint report."
"Create time within a traded service to be able to use SCERTS to its full potential"

Table 4.2. 'Other' responses to factors improving use of SCERTS in EP practice

4.3. Phase Two – Focus Group Results

The data collected from the focus groups was transcribed (appendix 15) and analysed using thematic analysis. The results are presented thematically in this section. These results, along with the results from the questionnaire data, are then discussed as themes in the subsequent 'Discussion' section (Chapter 5), responding to the two research questions presented at the start of this chapter. Figures 4.19 and 4.20 present a visual overview of the themes. Whilst the themes broadly map on to the individual research questions, there is some overlap across the themes and research questions. For example, the discussions relating to 'collaborative working' predominantly respond to RQ2, regarding impact on practice, however, the EP responses also relate to RQ1, regarding how SCERTS is used. This will be unified and discussed in Chapter 5.

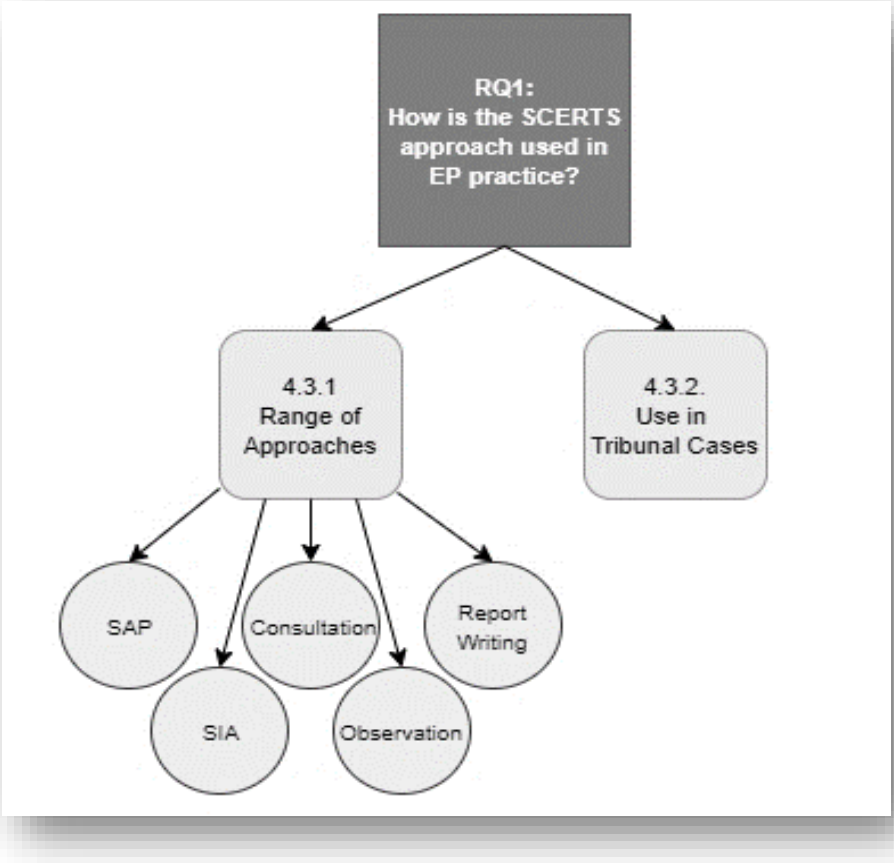


Figure 4.19. Thematic map relating to RQ1

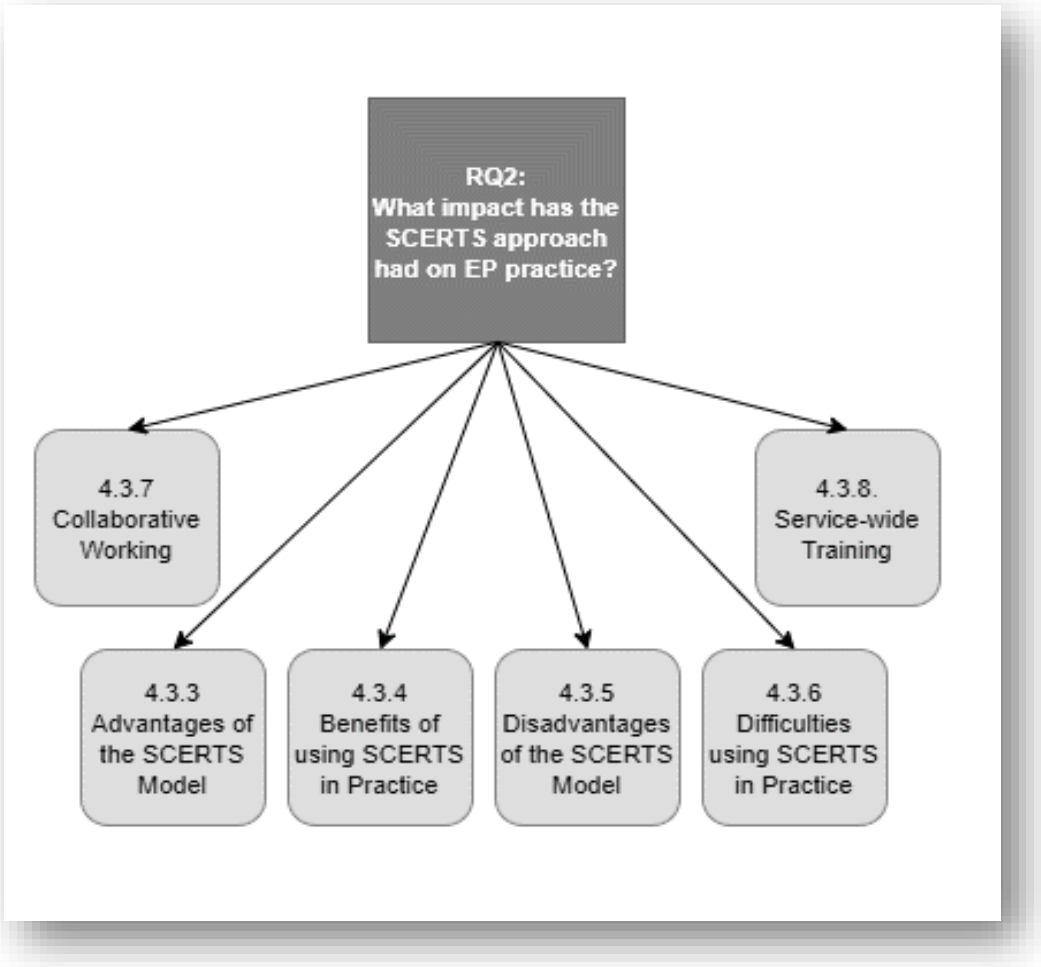


Figure 4.20. Thematic map relating to RQ2

4.3.1. Range of Approaches used in Practice

EPs in all three groups reported a variety of ways they have used SCERTS in their practice, such as: the full SCERTS Assessment Process, SCERTS in Action, consultation, observations, and in report writing.

Full SCERTS Assessment Process (SAP)

The discourse on why the SAP was used focused on its thoroughness, being able to assess progress over time, and complete thorough reviews. However, the practicalities of the time-consuming element of the approach was also raised. One

EP described how the detailed assess-plan-do-review approach to the SAP provided good evidence for the child to access an EHCP.

SCERTS in Action (SIA)

Overall, EPs reported using SIA more regularly than the SAP because it can be fitted in to the allocated time given by schools, and it can fit more easily into existing practice.

> *"I remember looking at the SCERTS assessment trying to work out how many sessions it would take, I don't have any schools with that many sessions anyway, so I think that's why I've mainly used SCERTS in Action a lot more."*
>
> *(Respondent H, Focus Group 1)*

Some EPs who had not used SIA were more motivated to use it following positive reflections from others. Discussion centred around taking this approach forward as it appeared more realistic in terms of fitting in with the service model.

Consultation

The discourse centred around using the knowledge and understanding of SCERTS to explain to school staff and families in consultation what the child may be experiencing and what next steps may be, with, or without, using it as a formal assessment (SAP or SIA). Some EPs reported an improvement in understanding and motivation from school staff when using the approach in consultation. Others

reported being able to gather additional information which may previously have been overlooked.

> *"In those consultations...she was so excited, she was writing down what she was going to do that week differently and that just came from that [consultation] so it was really easy just to introduce that in to that consultation"*
>
> *(Respondent A, Focus Group 1)*

Some EPs raised that the approach fits nicely with the service's existing consultation model and it would be easier to use this approach for routine casework rather than the full SAP. A couple of EPs suggested offering SCERTS training to school staff, with EPs holding a consultative role to support the work, resulting in a more efficient way of implementing the model in practice.

Observations

Observation tools were usually used prior to consultation, although some observations were used with a more appreciative focus, feeding back the strengths of the child's support system to school staff. This was generally seen as a useful, time-efficient use of SCERTS.

> *"The observation tool is the most simple and easy thing to use because it's just a piece of paper that I can take out and I think that is very easy to use and doesn't take up lots of time"*
>
> *(Respondent C, Focus Group 2)*

Some EPs described using it as a tool to encourage school staff to reflect on both the child's strengths and needs as well as their own professional strengths and needs.

Whilst the majority of EPs reported using the observation tools with a single focus child, one EP described using the observational tools at the whole-class level.

Report Writing

Several EPs felt that the structure and staged format of the model supported reflection and formulation, informing next steps, particularly when writing outcomes for psychological advice.

Some EPs have suggested a SCERTS assessment as a recommendation in their reports, or have read it in other professionals' reports, leading to collaborative working.

4.3.2. Use of SCERTS in Tribunal Cases

Some EPs who had experienced tribunals reported using the full SAP because they felt well supported by the approach in this context, not only because of the evidence base, but also because of the collaborative element to the model.

EPs also felt that the ability to rigorously and sensitively measure progress using the SCERTS model was highly beneficial in the complex legal tribunal situation, demonstrating clear evidence for or against a particular intervention.

> *"It's measurable practice, quantitative, you can draw and show progression using the statistical analysis which impresses in tribunals where they want to see the impact of something."*
>
> *(Respondent A, Focus Group 3)*

4.3.3. EP Perceptions of the Advantages of the SCERTS Model

EPs consistently raised three key aspects of the model which were considered advantageous:

- collaborative approach
- flexible use of the approach
- comprehensiveness of the model

These are presented in further detail.

Collaboration and Shared Understanding

EPs described how being able to use the approach collaboratively brought a wide range of expertise, and different aspects of child development, to the assessment. Collaborating with parents and school staff was reported to empower others and build capacity.

EPs described the positive impact of collaboration on developing a shared understanding of the child. It was considered beneficial to have the space to discuss observations with others, allowing for greater reflection as well as ensuring that all adults around the child had the same understanding of the current situation.

Flexible Use of the Approach

EPs reported that being able to use SCERTS in flexible ways to suit the time available and needs of the situation was advantageous and enabled greater use of the approach.

> *"Another advantage is that you can use it how you want, so...you can do a full assessment if you've got other colleagues or you've got the time, or you can use the observation tools or do a consultation and kind of write a report"*
>
> *(Respondent C, Focus Group 1)*

The flexibility of using SCERTS along with other approaches, such as PECS or emotion coaching, was considered advantageous, allowing for a combination of evidence-based approaches to be used as best suits the individual.

A Comprehensive, Evidence-Based, Developmental Model

A significant amount of discourse related to the benefits of the comprehensive, robust nature of the model and thoroughness of the approach. The importance of the evidence-base was raised, as were the benefits of collaborating with others for the assessment: information is triangulated and there is a shared sense of

responsibility. Some EPs felt the model had a clear, accessible framework, breaking down a complex situation in to just three areas: social communication, emotional regulation, and transactional support. This was considered particularly beneficial for the early years sector.

The benefits of the stepped and structured approach was raised, ensuring that basic skills had been attended to and consolidated before moving on to more complex skills. The assessment was felt to provide a clear indication of 'next steps', providing EPs with confidence in their recommendations, ensuring that targets set are appropriate and achievable. The approach was also considered helpful for other professionals involved in the approach or supporting the child:

> *"...and helping teachers think, because they don't get taught about what the next stage is for emotional regulation, social skills, or conversation. You know, they have a next step for reading and a next step for spelling, but they don't know the hierarchy for these [emotional regulation and social] skills."*
>
> *(Respondent B, Focus Group 1)*

EPs liked the sensitivity of the approach, recognising small steps of progress as large achievements for the child. In particular, EPs praised the recognition of awareness, engagement, joint attention, and motivation, all which precede more overtly recognisable developmental milestones, such as verbal communication. This meant that the model can be used at an early stage of development and show small steps of progress.

Finally, it was seen to be beneficial to be able to invest in the approach early and utilise the model across the years, from non-verbal children to expressive young people. One EP felt the early years setting was a good environment to use the approach in, due to the needs of the children often seen by EPs in this setting, the model of working in this environment, and early intervention.

> *"I would say the greatest proportion of statutory assessments in preschool are autism, so if we can embed SCERTS at that level and stop the panic about preschool autism children going in to [primary] settings without an EHCP, I think there's enormous expansion of the potential of SCERTS in that way."*
>
> *(Respondent B, Focus Group 1)*

4.3.4. Benefits of the SCERTS Approach in Practice

Whilst EPs reported the above advantages regarding the SCERTS model itself, EPs were also asked to describe what works well when using the approach in their practice. The EPs, across all three groups, raised four key themes:

- theoretical understanding of autism
- reflection on practice
- strength-based focus
- comprehensive understanding leading to clear targets

These partially overlap with the theoretical advantages of SCERTS, however, it became clear there were also differences between the advantages in theory and the benefits of the approach in practice.

Theoretical Understanding of Autism

Two groups highlighted the influence the SCERTS training had had on their understanding of autism and child development. The discussion focused on: seeing behaviour as communication; the importance of emotion regulation skills; and understanding the underlying motivations of children with autism.

The presupposition of the model that young people with autism do want to communicate despite the expectation by many that they don't want to communicate, was deemed to be helpful to understand. Some EPs explained the influential impact SCERTS has had on their practice in terms of understanding the stages of development for social and emotional skills, including language development:

> *"In SCERTS there's loads of social communication skills that it shows that come before the speaking, I thought that was really hopeful when [the child] isn't speaking"*
>
> *(Respondent C, Focus Group 1)*

The model was reported to shift the perspective of some EPs, as well as families and school staff, particularly regarding behaviour: behaviour was seen as a form of communication, rather than challenging behaviour to manage. The model reportedly improved empathy for the child and improved the adults' understanding of the child's motivations and need for purpose, predictability, and desirability.

Several EPs described the clear, beneficial impact the training had on their understanding and formulation of the needs of a child with autism:

> *"In terms of the principles it's genuinely the most inspiring training I think I've ever been on...really thought provoking...and the focus on the theoretical side of things I really really valued...[It's changed my understanding of autism] from this broad concept...it made it much more manageable"*
>
> *(Respondent B, Focus Group 3)*

Reflection on Practice

EPs reported the approach created a way of evaluating the support the child receives in school without becoming personal, along with supporting school staff to reflect, acknowledge and appreciate their own practice. This was helpful in encouraging self-reflection and supporting understanding of what they can take as next steps to further promote development.

> *"I've left [the observation tool] in schools for them to use and just reflect upon interactions. You know, oh I'm doing this, oh that could be this, and just to give them more knowledge and to skill them up in reflecting along those lines... It's really powerful for this."*
>
> *(Respondent B, Focus Group 2)*

Strength-based practice

EPs from all three groups appreciated the strengths-based approach, highlighting the ease of use and positive impact on school staff.

Some EPs found that the strength-based approach enabled school staff to have more confidence in their practice and to understand the importance of taking time to engage in relationship building away from academic demands. Some EPs felt school staff needed validation to work with the child in alternative ways to benefit their social and emotional skills, as opposed to measured academic skills.

> *"Quite often the adults that are affecting the most flourishing feel nervous about what they are doing, because we are in such a culture where they have to achieve these targets and that's the culture that says that this child is holding our SATs back...But the mutual regulation you just involved both of you in...and giving him transactional support...that's what's successful. That's you here at this stage of the model and you can see staff having confidence in that."*
>
> *(Respondent B, Focus Group 2)*

Comprehensive Understanding Leading to Clear Targets

EPs from across all three groups felt that a practical consequence of the previously described comprehensiveness of the model, was that they had a good understanding of the child's development and, therefore, were able to create clear next steps and targets for that child. EPs reported that the model provided distinct developmental steps, resulting in specific, measurable, achievable targets.

Some EPs described using the approach with children without autism but with social, emotional, or mental health (SEMH) needs, as a way of explaining development in this area and tracking progress.

"Quite often we go in and we're introducing SEMH to schools, and they're like, 'oh well we can't do anything it's their emotions', and well actually there are processes and these are the building blocks...I haven't just used it for children with a diagnosis [of autism], I use it as a tool to explain mutual regulation and leading to self-regulation, because of that staged process"

(Respondent B, Focus Group 2)

The ability to monitor progress was reported as an advantage of the model (see 4.3.3) and consequently several EPs reflected that, in practice, this was sometimes a key reason why SCERTS has been used over other approaches.

"It is such a sensitive tool to use, and I think for the young person we did it with, his need were so complex that some of the ways the school had been assessing where he's at just feel like they just weren't quite fine-tuned enough to pick up on those small steps...but we can use [SCERTS] and do an observation at home and at school again and see what difference, that feels like a real opportunity and something that's not happened for him"

(Respondent A, Focus Group 1)

The SCERTS model was felt to be reflective of real-life progress in a child's natural environment. EPs compared this to other approaches, such as Applied Behavioural Analysis where progress in the programme was thought to reflect less transferability to real-world scenarios.

4.3.5. EP Perceptions of the Disadvantages of the SCERTS Model

The focus groups consistently reported three disadvantages of the approach:

- time-heavy assessment
- language used
- complexity

Time

EPs felt that the time taken to complete a full SCERTS assessment was extensive and some EPs reported that even the more condensed SCERTS assessment (SIA) was still relatively time heavy.

> *"I think time is definitely [a disadvantage]. So when I tried to do it, SCERTS in Action but with three of us...we all conducted observations then we'd all come back, and then we had a two hour meeting to try to go through...and really we were only able to do two areas so we didn't get through all of them...and that was in two hours."*
>
> *(Respondent C, Focus Group 2)*

Several EPs reported that the SCERTS model also requires time to share observations and feedback, to collaborate, and to coordinate with other professionals. These were considered significant disadvantages of the approach, impacting on the use of the approach in practice.

Some EPs felt they would get quicker with practice, although the approach itself would still be time consuming, whereas others felt that even with more practice it would still require a significant time commitment.

Whilst some EPs were able to justify the time within a tribunal or statutory process, many EPs felt that it would be more difficult to persuade schools to buy in large amounts of time for a single assessment in the traded context. However, one EP felt this could be overcome through evidencing the benefits of the approach:

> *"It's about the time it takes as opposed to other assessment methods, however, I think we quickly overcome that when the school see the benefits, but you've got to get them over that hurdle first."*
>
> *(Respondent B, Focus Group 1)*

Language

Many EPs thought that the language used would be difficult for school staff and families to access without having attended formal training. Some EPs reported finding it difficult to understand their own reports when reading back through at a later date as the language was technical and complex.

> *"It has its own language and discourse around it with the assessment and which has to be explained for people who haven't been trained in it."*
>
> *(Respondent F, Focus Group 3)*

The language used not only impacted on user-friendliness, but also on the time taken to use approach. Several EPs reported having to spend time deciphering or translating language to create comprehensible reports, spend additional time going through paperwork prior to the assessment purely to understand the language used, and translating the language to those attending reviews or supporting the assessment.

Complexity

There was a clear message from the EPs that the formal training was crucial to understand the approach, however, also that the approach and formal training had an overwhelming volume of information to digest.

"For EPs taking that first step from those training days that were so information laden, to actually think about right, what does this look like, which bit of paper do I need to take in to school, have I got it all, which bit have I missed, how do I interpret this. It's just getting over some of those hurdles initially...there's so much."

(Respondent B, Focus Group 1)

The manuals were also considered complex. Whilst EPs appreciated that this was essential to cover all the information necessary for the comprehensive assessment, it was felt to be intimidating and off-putting.

"The manual is really intimidating when you look at it, really thick, tiny print. What's in there is gold but you just look at it as a busy person, how can I get to it!"

(Respondent G, Focus Group 3)

"That's one of the main reasons why I haven't used it yet!"

(Respondent F, Focus Group 3)

4.3.6. Difficulties of using the SCERTS Approach in Practice

Time and language were reported to form a barrier when using the approach in practice:

"You know the last child I saw took 6 hours of observation to see him in all the different sorts of partnerships, contexts, and groups and things, and that's not really realistic, we don't get to do that"

(Respondent G, Focus Group 3)

"I've had the...experience, where a parent has said, I know you've written this report, but I don't understand it."

(Respondent E, Focus Group 3)

Three other difficulties in practice were raised:

- the impact of other peoples' understanding of SCERTS on their ability to utilise it in practice
- difficulties with inconsistent use of the approach in practice
- difficulties using the approach in secondary schools

Wider Understanding of the SCERTS Approach

A small number of EPs from across two of the focus groups raised the issue of schools' poor knowledge and understanding of the SCERTS approach, with this becoming a barrier to their practice. It was felt that without wider knowledge, understanding, and trust in the approach, it was difficult to justify using it, particularly given the time commitment required:

> *"I think if we want to be using SCERTS in our practice then I think schools should understand SCERTS or at least be aware of what it is, the advantages, how to interpret it."*
>
> *(Respondent A, Focus Group 2)*

Inconsistent Use

Several EPs felt that they had not been able to use the approach regularly and consistently in their practice, creating difficulties with fluency, particularly due to the complexity, adding additional time to the already time-consuming piece of work.

> *"My experience of SCERTS has been so stop start...that when I come to do it again it's almost like going back to square one again and trying to remember what it is I've got to do."*
>
> *(Respondent C, Focus Group 3)*

One EP reported that this difficulty in fluency impacts on their ability to promote it within schools, linking back to the previous difficulty – school's limited understanding of SCERTS. Several EPs raised a need to dedicate more CPD time to the approach. This would improve understanding of the complex approach and provide a dedicated space to practice and become fluent with the tools.

Use in Mainstream Secondary Schools

One group focused on the lack of use of SCERTS in mainstream secondary schools. They felt this was related to the systems in place for the various age groups, with early years work aligning more closely with the SCERTS forms and the staged structure of the approach. EPs raised that in settings for older children (key stage 3+) there is less ownership of an intervention, particularly as young people move between several teachers in a day. The EPs raised that the alternative approaches they would choose over SCERTS in a secondary school have more general targets to aim for. Whilst the specificity of the SCERTS model was raised as a key benefit to the approach previously, this appeared to be a difficulty when using it in the mainstream secondary context:

"I'm just reflecting on my use of [alternative approaches], because it gives you more general targets to aim for, but again that's linking to my assumption that there's no-one specific that's going to take on responsibility [in school], so then we have more general targets to aim towards."

(Respondent B, Focus Group 2)

4.3.7. Collaborative Working

There were mixed views on whether SCERTS had changed how EPs work with other professionals. Some EPs reported that SCERTS actively encouraged and improved collaboration in their working, whereas others felt it had not changed their practice due to time commitments relating to collaboration. Some EPs highlighted that the challenges in working with other professionals was not unique to SCERTS, rather a system and service model difficulty. The general consensus was that the collaborative aspect of the SCERTS approach is good in theory, however, much more difficult in practice.

EPs raised three points about collaborative working during the discussions:

- having a shared understanding
- knowing other trained professionals and having relationships
- the practicalities around collaborative working

Shared Understanding

The shared language and understanding of the child was reported to create a more comprehensive, joined up assessment. This appeared to be of particular benefit when EPs worked with Speech and Language Therapists as the different

professionals understood distinct aspects to the child which may have been overlooked in single profession assessments.

> *"By doing it, it creates that joint language, so just by having that one meeting with the SALT and early years teacher we were all talking about things in the same way and making sense of it in the same way, using shared language, and also it was CPD for me because the SALT understood some things in a different way to me."*
>
> *(Respondent C, Focus Group 2)*

Other Trained Professionals and Relationships

Some EPs had existing relationships with other professionals trained in the approach and SCERTS provided a forum to link up practice; other EPs developed new relationships with other professionals through the suggestion of using SCERTS with a child in common. However, some EPs reported finding it difficult to know who had received the training, therefore, creating a barrier to multidisciplinary working. The questionnaire data reported more collaboration with EPs than with other professions – EPs in one focus group reflected on this, suggesting that this may relate to existing relationships, knowledge that other EPs are trained, and more regular contact with each other. Some EPs were based in a multidisciplinary centre, therefore had more opportunities to build relationships, which was thought to improve multiagency working.

[Facilitator: "You mentioned you had a conversation around a photocopier [about SCERTS], do you think that being based in an office which is a multidisciplinary centre, do you think that helps that joint working, you're more likely to bump in to other professional areas?"]

"Yeah definitely, yeah it does actually. I see the same person in the kitchen and getting coffee and things like that so yeah."

(Respondent C, Focus Group 2)

Practicalities

EPs reported two key practical difficulties when collaborating with other disciplines on a SCERTS assessment: time and models of working.

"Her allocated time wouldn't fit with the SCERTS model, because I think we used more than a years' worth of time in that term for that child, in terms of what she could do."

(Respondent C, Focus Group 1)

Several EPs reported that finding time in which at least two professionals are available, sometimes on more than one occasion, can be logistically difficult. Further, several EPs raised differences in models of working as creating a barrier to working collaboratively.

"The last time I did it on my own because I just couldn't get people there to coordinate with to see the child in all the scenarios I needed to see them in"

(Respondent G, Focus Group 3)

Other EPs reported that, despite some other professionals receiving the training (e.g. occupational therapists), they did not see a SCERTS assessment as part of their remit, therefore have never approached these professionals to collaborate.

4.3.8. Service-wide Training

> *"I think if I'd just gone on my own or maybe with just one other person, I would not have used it, it would have felt too overwhelming"*
>
> *(Respondent B, Focus Group 1)*

EPs from all three groups overwhelmingly agreed that receiving the training as a whole service improved the likelihood that the SCERTS approach was used in their practice, in contrast to training one or two specialists in the approach. The service-wide training approach resulted in EPs being surrounded by SCERTS, feeling well supported in venturing out and using something new in practice as a result of continual discussions and sharing of practice. In addition, some EPs felt that by having discussions with colleagues the overwhelming volume of information and complexity of the model became digestible and manageable, to a point where EPs felt able to use it in practice.

> *"I did the training with a small number of people before the whole service training, and I've used it much more since everyone has done the training, now there are reports and things sent round, and people saying 'oh I've one this' and that's really supportive at having a go I think, yeah, that's made a difference."*
>
> *(Respondent A, Focus Group 1)*

Discussion highlighted wider benefits of training the whole service in the approach, reducing the impact of the previously described barriers. For example, the shared language and understanding reports written by others. EPs felt that the complexity and volume of information shared in the initial training could not adequately be replicated through peer dissemination. Some EPs felt that it also provided an

opportunity to network with other services attending the training, reducing the previously described barrier of knowing who is trained in the approach.

One EP raised that having specialist EPs trained in the approach would not fit with the traded service model, particularly where EPs have a designated patch of schools:

> *"The practicalities of how we divide our time up and the fact we are a traded service...if someone [specialist SCERTS trained EP] is stepping in to your school....how does that all balance out...and actually it doesn't build the confidence of the school with the link EP...they're the ones that have the longevity, you want to keep having those conversations when you're in next"*
>
> *(Respondent B, Focus Group 3)*

Whilst all EPs agreed the whole service training approach was preferable to training specialists, one EP suggested that, from a managerial perspective, training the whole service may not be as cost effective as training a small number of specialists, as not all the EPs have used, or will use, the approach in their practice.

4.4. Summary of Chapter

This chapter has presented the quantitative results of the questionnaire data and the qualitative results of the thematic analysis of the focus group data, in order to provide evidence for the discussion in the subsequent chapter. Chapter 5 aims to answer the two research questions, using these as a framework to guide the discussion and merge the data from the different stages of the research, informing the reader of the real-world use of the SCERTS approach in EP practice.

CHAPTER FIVE

DISCUSSION

5.1. Overview of Chapter Five

This chapter discusses the results of this research and connects to previous literature discussed in Chapter 2. The main body of the discussion is structured by the two research questions, organised further by presenting the key findings as responses to the questions. Methodological considerations are reflected upon and the strengths and limitations of the thesis are presented.

Synthesis of the Data Sets

The data collected in each phase of the research was reviewed in relation to the research questions. Table 5.0 demonstrates the synthesis of the results of the data from both phases of the research, as presented in Chapter 4, in order to answer the two research questions:

- RQ1: How is the SCERTS approach used in EP practice?
- RQ2: What impact has the SCERTS approach had on EP practice?

	Quantitative questionnaire results +	**Qualitative focus group results** =	**Synthesis**
RQ1	• 4.2.2. Use of the SCERTS approach in EP Practice • 4.2.3. Reviews • 4.2.4. Type of work • 4.2.5. Professional collaboration and multidisciplinary working • 4.2.6. Child profiles • 4.2.8. Barriers to use of the SCERTS approach • 4.2.9. Going forward	• 4.3.1. Range of approaches used in practice • 4.3.2. Use of SCERTS in tribunal cases • 4.3.3. EP perceptions of the advantages of SCERTS • 4.3.4. Benefits of the SCERTS approach in practice • 4.3.7 Collaborative working	The SCERTS approach is: • adapted and used flexibly (5.2.1) • used across situations to meet different professional needs (5.2.2) • used collaboratively (5.2.3) • more frequently used with younger children (5.2.4) • used to monitor progress (5.2.5) Future use of SCERTS (5.2.6)

RQ2	• 4.2.7. Understanding and confidence • 4.2.8. Barriers to use of the SCERTS approach • 4.2.9. Going forward	• 4.3.3. EP perceptions of the advantages of SCERTS • 4.3.4. Benefits of the SCERTS approach in practice • 4.3.5. EP perceptions of the disadvantages of the SCERTS model • 4.3.6. Difficulties of using the SCERTS approach in practice • 4.3.7. Collaborative working • 4.3.8. Service-wide training	The SCERTS approach: • improved EP understanding of autism and child development (5.3.1) • enhanced EP reflections (5.3.2) • improved EP confidence in professional practice (5.3.3.) • influenced how EPs work with others (5.3.4) Enhanced benefits of whole-service training in the SCERTS approach (5.3.5)

Table 5.0. Synthesis of the results from the quantitative and qualitative data

5.2. RQ1: How is the SCERTS approach used in EP practice?

5.2.1. The SCERTS approach is adapted and used flexibly

Originating in French anthropology, the term ‘bricolage’ suitably characterises the diverse approaches often used in EP practice (Denzin & Lincoln, 2000; Burnham, 2012). ‘Bricolage’ refers to a ‘professional jack-of-all-trades’ using a bespoke mix of approaches to best reach a solution. This is often the case in EP practice as the complex reality of a situation in school often differs from the ‘ideal’ controlled conditions in research (Kratochwill, 2007).

Correspondingly, in this research EPs raised that the SCERTS approach was often adapted and used pragmatically as best suited the situation. EPs reflected particularly on the ease of use of the observation and information gathering forms

as well as using the principles and theory underlying SCERTS in guiding their practice or in consultation.

Kasari and Smith (2013) highlighted the practical barriers to implementing evidence-based autism interventions in practice, such as time, training, and resources. The findings of the current research reflect this, with EPs adapting the model to use more time-effective approaches more regularly in practice than the formal approach, in order for SCERTS to work more successfully within the school system. Prizant et al. (2006) pre-empted this, advocating flexible use of the approach to meet the needs of the context. As a result, the approach is adaptable and can be used in any number of ways. EPs described using the SCERTS tools informally during reflections, as well as more formally in report writing and in creating evidence-based targets in intervention plans. These uses of SCERTS are not presented in the SCERTS manuals – EPs have taken the initiative to develop the most helpful ways of using the approach pragmatically in their practice. This is consistent with Burnham's (2012) research, highlighting the pragmatic nature of EP practice: EPs typically utilise knowledge of both the system and the approach to develop a complementary and effective intervention for the individual. Durlak and DuPre (2008) raised that interventions need to be adaptable, and expecting perfect implementation is unrealistic. Further, their research highlighted two key characteristics fundamental for an approach to be used effectively in practice: adaptability, and compatibility. This research reflects these as strengths of the approach, enabling the use of SCERTS in EP practice.

However, whilst flexible use of SCERTS is advocated, without overt suggestions or examples of the various approaches which may be taken, this can become a barrier.

Particularly within the time-allocation model of EP practice, EPs may not have time to reflect and develop new uses of an approach. Gersch and Teuma (2007) researched factors affecting EP stress levels, finding that having limited time for reflection was a key source of stress. This may be one reason why SCERTS is not used more regularly in EP practice.

The use of more flexible approaches of SCERTS was particularly evident in traded work with schools, reflecting the impact of time and funding pressures in EP practice, as raised by Baxter and Frederickson (2005). The formal SAP and SIA approaches were used less often in EP practice and used only when the context allowed. This reflects an ecological perspective in determining the use of an approach, as often used by EPs (Dunsmuir & Hardy, 2016) and considered vital in successfully implementing an approach (Durlak & DuPre, 2008).

Overall, the flexibility of using SCERTS in various ways to suit the needs of the context, enabled EPs to create a detailed assessment and understanding of the child within the time available. This was seen as a key advantage of the approach, linking the pragmatic nature of EP practice with the clear psychological underpinnings of SCERTS.

5.2.1.1. Barriers to the use of the approach

Practical barriers were raised regarding the use of the more formal, less flexible SCERTS approaches, such as SCERTS Assessment Process (SAP), and even SCERTS in Action (SIA), impacting on the regularity of use in EP practice. Time constraints were repeatedly raised as a difficulty in using SAP, also indicated by Ayson (2011) in Speech and Language Therapy practice. Specifically, EPs

highlighted the complexities of the approach and aspects of multidisciplinary working as time inefficient. Whilst some EPs felt this initial time-heavy investment was beneficial in the long-term, getting schools to understand this can be challenging in the traded model. Islam (2013) highlights that, within the traded model of service delivery, the school as commissioners are the power holders in determining the time spent on particular pieces of work, reducing the influence EPs may have in negotiating longer pieces of work.

A lack of confidence in explaining SCERTS to schools due to its complexity was raised as another barrier to its use, corroborating Waite and Wood's (1999) finding that confidence in understanding autism did impact their practice. This may impact buy-in to the approach, further limiting its use in practice. EPs considered the formal training as imperative in understanding the approach. Even after 3 full days of formal training many EPs were left overwhelmed and confused, requiring additional investment in reading and discussing with colleagues in order to understand the approach. It would therefore be inappropriate to expect schools and families to understand SCERTS without offering a substantial level of training.

Molteni et al. (2013) raised that the complex nature of the SCERTS manuals created a barrier to the use of the model in a special school, and this finding was echoed in the current research with EPs. EPs appreciated the comprehensiveness of the information provided in the manuals, however, felt this also made them *"intimidating and off-putting"*, with EPs actively avoiding using the model as a direct consequence of this. Likewise, the language and terminology used in the SCERTS model created barriers to its use, with EPs becoming translators as well as psychologists. This impacts the time required to use the approach, both in collaboration and in report

writing. Clearly, this can be overcome with the creation of a supplementary, user-friendly, condensed version of the manuals, as suggested by one EP during the focus groups and Molteni et al. (2013). However, this creates further pressures within a traded service as this type of activity is not funded, unless continued professional development (CPD) time is specifically protected for this.

Due to these barriers, EPs appeared to use the formal elements of SCERTS inconsistently in their practice. This creates difficulties in fluency and impacts the EP's confidence in using the approach correctly, impacting further on the time aspect of the approach, as found by Squires and Dunsmuir (2011) regarding EP use of other approaches. Given the already heavy investment in SCERTS by this EPS, dedicating more service-wide CPD time to understanding SCERTS would be beneficial in overcoming some of these barriers. This would provide EPs with the opportunity to share practice, particularly the inventive and flexible approaches to SCERTS. It would also enable EPs to become more familiar with the tools, improving fluency and confidence, reducing the time needed for these during an assessment.

5.2.1.2. Conclusion

Overall, the use of SCERTS in EP practice was strongly linked to the practicalities of the approach. Clarke (2004) reports:

> *"...rigour is not everything. Saying only what you can say with a high degree of certainty is often less important and less useful than doing the best you can with the information available, and in the time available." (p.83)*

The more time intensive aspects of SCERTS are used less regularly in EP practice than the flexible approaches. This directly relates to the practicalities in using the structured approach as barriers to its use (Burnham, 2012; Durlak & DuPre, 2008). The overall message from EPs suggests they would like to use the approach more regularly, however, it needs further development, and sharing of effective adaptations, to make it more practical in the current, traded context.

5.2.2. The SCERTS approach is used across situations to meet different professional needs

As indicated in section 5.2.1., the flexible forms of using SCERTS are used more frequently in traded EP practice where time is a clear issue, than SAP or SIA (Figure 5.1). However, these structured approaches to SCERTS are also used in EP practice, although more commonly used for different purposes. Whilst some EPs have been able to overcome practical barriers, or validate the time spent, in traded practice, this research indicates that the time needed for the more structured approaches can be more appropriately justified when comprehensivity is key, for example, in tribunal cases (Figure 5.2). Bennett (1998) described how a special educational needs tribunal seeks to determine whether a child's needs have been sufficiently assessed, and further determine whether these needs are being met by a provision. As a result, an EPs priority in a tribunal situation, as an expert witness, would be to ensure a thorough assessment has taken place to best understand the child's needs.

In tribunal cases EPs reported greater use (and prospective use) of the formal SAP approach in comparison to the flexible approaches, as it provides a well-supported structure, a rigorous evidence base, and shared responsibility through the

collaborative aspect. In addition, it provides a system for monitoring real-life developmental progress, as opposed to progress on a particular intervention in a contrived situation. These are key benefits of the approach particularly valued by EPs, as it meets the recommendations set out by the National Research Council for educating children with autism (NRC, 2001) (Figure 2.12 – Chapter 2), and provides good evidence of a thorough assessment of needs (Bennett, 1998).

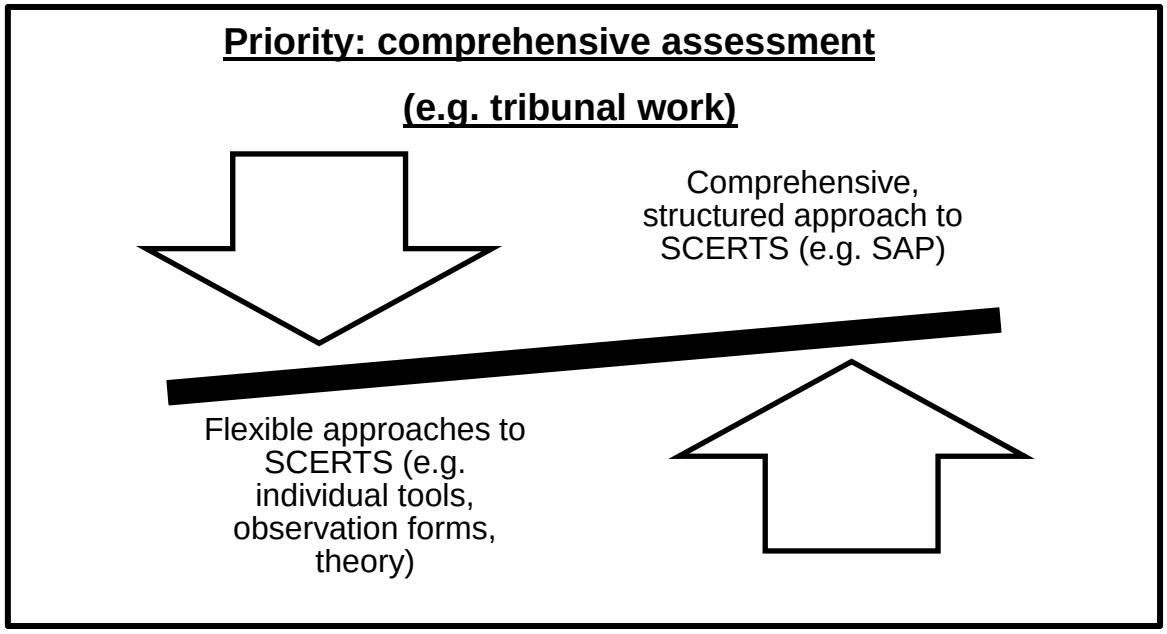


Figure 5.1. Conditions under which the structured approaches to SCERTS are used

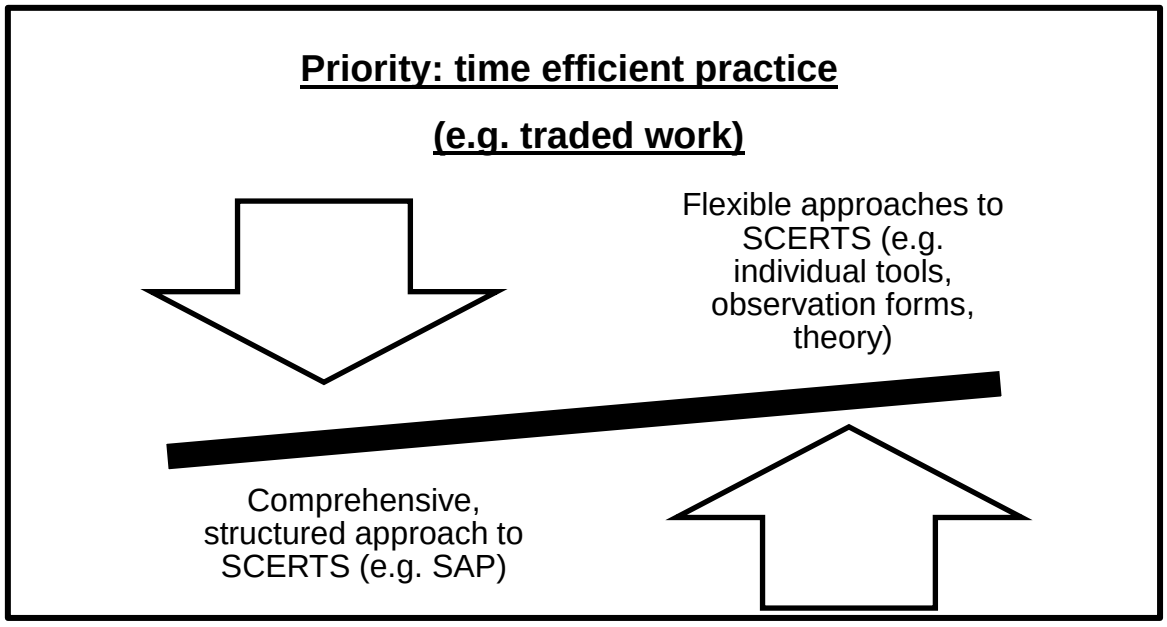


Figure 5.2. Conditions under which the flexible approaches to SCERTS are used

SCERTS has been used successfully in statutory work by EPs, for example during psychological assessments as part of Education, Health and Care Needs Assessments (EHCNA), or in traded work when gaining evidence towards an EHCNA. The assess-plan-do-review approach of the formal SCERTS approaches provide sound evidence for this process. This fits neatly with the assess-plan-do-review approach recommended in the SEND Code of Practice (2014). The current research indicates that, when SAP or SIA is used, reviews do tend to occur – the approach is rarely abandoned without follow-up. As EPs utilise the assess-plan-do-review approach regularly in typical practice, this finding is not surprising (Robinson, Bond & Oldfield, 2018). Therefore, in theory, SCERTS should be able to fit into typical EP models of working, given due attention to the practical barriers as described in 5.2.1.1.

Overall, when working with a child with autism or social communication needs, SCERTS is generally considered appropriate and useful. The context of the work often dictates the approach used, whether formal or informal, as best suits the needs of the situation. This reflects the systems approach often considered by EPs (Durlak & DuPre, 2008), as the use of SCERTS is highly influenced by many external factors.

5.2.3. The SCERTS approach is used collaboratively

This research indicates that the SCERTS model is often used collaboratively with colleagues. This aligns with previous literature exploring the use of SCERTS in special schools (O'Neil et al., 2010; Walworth, 2007, Walworth et al., 2009).

However, these studies generally raised that multidisciplinary working has challenges, such as being time consuming (Molteni et al., 2013).

SCERTS collaboration in EP practice appears to be based on ease of access, rather than aiming for multidisciplinary working to widen the knowledge base for a more comprehensive assessment. This likely relates to practicalities, as found by Sloper (2004), such as regular contact with each other, ease of aligning diaries, existing relationships, and knowledge of colleague training. Correspondingly, EPs based in multidisciplinary centres reported increased multidisciplinary working using SCERTS as a result of the shared environment, corroborating this hypothesis.

Previous research (O'Neil et al., 2010; Walworth et al., 2009; Walworth, 2007) indicates that the SCERTS model improves collaborative working. However, the current research suggests that, in the context of EP practice, this impact is less pronounced. Some EPs reported the model actively encouraged them to collaborate with other professions, either within existing relationships or creating new relationships, whereas others reported no increase in collaboration above their current practice due to practicalities. However, these practical difficulties associated with multidisciplinary working are rooted in the wider service, local authority, NHS, political and cultural context, and are not unique to SCERTS (AEP, 2008).

5.2.4. The SCERTS approach is more frequently used with younger children

Although the SCERTS model was created for use at any age, the approach appears to be used more often in EP practice with younger children. This may relate to the format of SCERTS aligning more closely with existing models of practice with younger children, such as staged development (DfE, 2018).

Farouk (1999) described difficulties with secondary school teachers having the time and space to reflect upon the behaviour of individual children, given that they may teach over 100 children each day. Likewise, EPs in this research felt the use of SCERTS with older children was more challenging due to the different approaches and culture in secondary schools. In particular, the lack of accountability and shared responsibility of a child's care as they grow older, as alluded to by Farouk (1999), impacts the use of the model in this context. The specificity of the model also caused difficulties in this context, with broader targets generally used with older children as a result of the lack of accountability. Therefore, whilst the lifespan aspect of the model was appreciated, the model is not used to its full potential across ages in EP practice. Whilst no formal, developmental reason accounts for a lack of use with older children, clearly the practicalities of using the approach in this more complex environment create further barriers to its use.

5.2.5. The SCERTS approach is used to monitor progress

In EP practice, SCERTS was sometimes the chosen assessment tool, instead of other methods, due to its ability to sensitively and rigorously measure progress, particularly small developmental achievements often missed by other measures. This use of the model again indicates the substantial impact pragmatics have on the use of an approach in EP practice, in addition to the existence of a robust evidence base (Burnham, 2012; Robinson, 2017).

This research highlighted that the emotional regulation element of SCERTS can be used to explain key stages in developing emotional regulation skills for children without diagnoses of autism but with social and emotional needs. Wigelsworth et al.

(2010) reviewed the issues related to measuring social and emotional skills, highlighting many difficulties, including: difficulties with underlying theory, the limitations of many measures including lack of specificity, and practical issues. However, the SCERTS model creates an evidence-based structure to measuring social and emotional development. In practice, this allowed EPs to track progress of emotional regulation skills, a concept notoriously challenging to monitor (Wigelsworth et al., 2010). This links back to EPs 'bricolage' approach to practice, using whatever tools are most helpful to create understanding and progress for the child.

Further, Islam (2013) highlighted the importance of robust strategies to evaluate the impact of EP work to justify the commissioning of the service. This is often considered a challenge in EP practice as few appropriate appraisal schemes deliver a clear appraisal of the uniquely multifaceted elements of EP work (Webster, 2010). However, progress using the SCERTS model not only accounts for child developmental progress, but also as evidence of the value of EP input, providing further benefits of its use.

5.2.6. Future use of the SCERTS approach

This research indicates that, to improve the use of SCERTS in EP practice, EPs require: greater knowledge and understanding of the use of the approach in limited timescales; and, a greater level of support from others to improve confidence and understanding of the approach. Many EPs reported they would use the SAP to provide structure and a comprehensive assessment in possible tribunal situations. This indicates that the SCERTS model is valued for its ability to provide a

comprehensive assessment in EP practice, and the practicalities can be overcome when the situation demands this level of rigour (Bennett, 1998).

The discussion of SCERTS in the focus groups enabled EPs to reflect on the approach and inspired them to find alternative ways of using it. Some EPs had previously only used SCERTS minimally due to the complexities of the model and barriers as discussed in section 5.2.1.1. However, through this discussion EPs appeared to be able to visualise using the approach in more flexible ways in which they had not previously considered. Clearly, the practical barriers associated with the model had created a significant barrier to its use for some EPs and simply providing time and space to share good practice reduced the impact of some of these barriers.

5.3. RQ2: What impact has the SCERTS approach had on EP practice?

5.3.1. The SCERTS approach improved EP understanding of autism and child development

Prizant et al. (2006) asserted that a priority of the SCERTS model is to create a developmental framework underpinning social communication and emotional regulation. Existing research presented in Chapter 2 indicated improved understanding of the child's needs and a positive impact of the comprehensive, developmental structure of the model on school staff practice with children with autism (Yu & Zhu, 2018; Limbert, 2017; Greathead et al., 2016; O'Neil et al. 2010). The current research replicated these findings in EPs, indicating that SCERTS provided EPs with an improved understanding of autism and child development.

This is a notable feature of SCERTS given that all qualified EPs already hold at least a masters or doctorate level qualification encompassing knowledge of child development.

The SCERTS model improved EP understanding of behaviour as a means of communication, reiterating the stance of "*what is the child trying to tell us?*" and supporting EPs to develop this approach in others, such as families and school staff, adding to Yu and Zhu's finding (2018). The focus on the importance of developing emotional regulation skills in SCERTS enabled greater understanding of *why* a child behaves in a certain way and emphasised the significance of understanding the underlying motivations of the individual, as highlighted by Durand (1993). Further, the model provided EPs with an evidence-based, structured understanding of the stages of social and emotional development – areas which have previously been challenging to explain in this way (Wigelsworth et al. 2010). The focus on language development, whilst perhaps not new to Speech and Language Therapists, is not an area as well described in educational psychology training, resulting in inconsistent knowledge in the area across EPs (Sedgewick & Stothard, 2019). EPs valued this part of the model, particularly the research underlying language development and the skills required for pre-language development. In addition, some EPs, whose areas of interest did not include autism, indicated that the model provided them with a greater understanding of autism overall, reducing it from an elusive concept to an evidence informed condition in which they could offer support.

The SCERTS model is, therefore, a beneficial CPD investment by EPSs despite some EPs not using the formal model in practice. The knowledge provided by the training offered all EPs some level of greater understanding whatever their current

level of knowledge regarding autism was, and for some EPs, substantially changed their practice in this area.

5.3.2. The SCERTS approach enhanced EP reflections

The use of SCERTS enhanced EP reflection skills due to the strengths-based approach utilised by the model. O'Neil et al. (2010) and Molteni et al. (2013) both previously reported this, however, with school staff where reflection may not have been an existing part of daily practice. Reflection is a key element of EP practice and encouraged through regular supervision (Dunsmuir & Leadbetter, 2010). Training in SCERTS enabled further reflection through a greater understanding of the child and context, and through the SCERTS tools, such as the positively framed observation forms. Strengths-based practice is widely recognised and valued in EP practice (Bozic, et al., 2017), and the SCERTS model is in line with this approach, appealing to many EPs.

5.3.3. The SCERTS approach improved EP confidence in professional practice

As a result of the improved understanding of autism and child development and enhanced reflection skills, the SCERTS model also generally improved EP confidence in their practice. This relates to the evidence-base and structure of the model, particularly being able to share this knowledge with schools and families, and having improved specialist knowledge in the area – a previous barrier raised by Suldo et al. (2010). The majority of EPs described the model as comprehensive yet clear, breaking child development into manageable stages which can easily be understood. However, a small number EPs did report having a lower level of

confidence in their practice when using SCERTS compared to other approaches. This was qualified by a lack of understanding of the full SCERTS approach and how to use the framework effectively. This relates to the barriers of the approach as discussed in section 5.2.1.1, particularly the complexity of the approach, language used, the need for formal training, and the need for collegial support.

In teaching, schools have access to stepped frameworks for many academic skills, such as learning to read, write, and develop maths skills. However, schools generally do not have access to, or an understanding of, social and emotional development stages, as this is also a challenge within the field psychology (Wigelsworth et al. 2010). The SCERTS model provides this structure, meeting the needs of the teaching staff, and improving the confidence of many EPs when asked, "*what's next?*"

The staged approach of the model also largely improved EP confidence in setting the 'next steps' when writing reports and determining appropriate targets. This comes from a level of trust in the approach to determine appropriate steps for the child – having vast theoretical evidence provides this level of trust in the approach. Further, when using SCERTS as a framework for development in the early years, the model improves EP confidence that key early skills have not been missed.

Finally, Waite and Woods (1999) found that some EPs had concerns regarding individual EP assessments of autism-related needs, therefore appreciated collaborative working in this arena. The current research furthered this finding, highlighting that collaborating on a SCERTS assessment increased EP confidence in their practice. This comes from two elements of the approach: triangulation of assessment findings; and sharing the responsibility of determining a path of

development for the child with others who know the child well, particularly those who have parental responsibility.

5.3.4. The SCERTS approach influenced how EPs worked with others

Using the SCERTS model created a shared understanding of the child, enabling a joined-up assessment, in contrast to several individual assessments from various professionals. Durlak and DuPre (2008) found that shared responsibilities improved the implementation of support and therefore outcomes. Therefore, this aspect of SCERTS was clearly appreciated by EPs.

Working collaboratively also improved the level of understanding of school staff and families with regards the needs of the child. Similar to the discussion in sections 5.3.1. and 5.3.2., this way of working improved others' levels of understanding, with regards behaviour as communication, and the level of reflection on others own practice, such as school staff. This consequentially created an empathetic perspective from others, improving motivation to support the child's development in the key areas. This finding comes from sharing the theory underlying SCERTS, highlighting the benefits of this approach in practice. It also indicates that the flexible approaches to SCERTS, as discussed in section 5.2.1, can have significant beneficial impacts on the practice of others and meeting the child's needs, without needing to employ the full SAP. This is consistent with Durlak and DuPre's (2008) finding that positive outcomes can still be achieved with only 60% fidelity to the approach.

In addition, utilising a strengths-based approach empowered school staff in their practice, improving confidence in their work. This reflects the positive findings of strength-based approaches in EP practice (Bozic et al., 2018). In particular, the transactional support aspect of SCERTS stresses the importance of relationship building and highlights when adults are doing this effectively with the child. This supports school staff to engage in these important, non-academic activities, offering EPs formal evidence for recommending this strategy.

Rumble and Thomas (2017, p.22) found that multidisciplinary working enabled "*high levels of informal CPD*", being described as "*invaluable*" in enabling EPs to become "*better practitioners*". Correspondingly, the current research found that SCERTS enabled EPs to access a greater understanding of language development through collaborating with speech and language therapists. Collaboration resulted in a deeper understanding of the child's needs as a result of discussion between two distinct professions. This is not always routine in EP practice, however, some EPs may be more likely to liaise with other professionals as a result of experiencing the benefits of this through SCERTS.

Islam (2013) questioned whether, given the traded context, EPs should respond to the work presented and valued by schools, such as individual casework, or move towards other, capacity building methods of working (Ashton & Roberts, 2006). Fallon et al. (2010) also raised a similar issue, indicating that EPs may need to develop specialisms in order to improve 'saleability' of EP time given the traded context. The SCERTS approach arguably meets all these values: individual-focused practice through using SCERTS with a focus child, capacity building through developing the practice of school staff and their understanding of child development,

and offering a specialism through the specialist knowledge underlying the SCERTS model for children with autism. Previous research has demonstrated efficacy of the model (Yu & Zhu, 2018; Morgan et al., 2018; Limbert, 2017; Wetherby et al., 2014; O'Neill et al., 2010; Odom et al., 2010), and the current research offers evidence towards capacity building and the development of specialist knowledge.

5.3.5. Enhanced benefits of whole-service training in the SCERTS approach

Atkinson et al. (2012) described whole service training as beneficial in offering all EPs access to CPD, but more beneficially, for colleagues to offer peer support in developing the skills learnt from the training. The results of the current research corroborate this, clearly demonstrating that receiving the SCERTS training as a whole team was substantially more beneficial than individual specialist training in the approach (one or two SCERTS specialists for the service). Whilst not all EPs used the approach in their practice, the knowledge and understanding of the SCERTS language and theory was still considered highly important: to understand the practice of fellow EPs or other professions, to develop a shared language, and to develop a deeper understanding of autism. Individual specialist training was also deemed not to fit with the traded model, therefore creating major practical barriers to its use in EP practice.

A key finding of this research was that, by receiving the training as a whole service, the likelihood of its use was greatly improved. The feeling of being 'surrounded' by SCERTS was necessary in feeling supported enough to comprehend the complexities of the model and to trial elements of the approach in practice. Informal peer supervision appeared to play an important part in the use of SCERTS: sharing

good practice, discussing the complexities of the approach, sharing concerns, and ensuring a sound understanding of the model. EPs unanimously voiced this view, with collegial support providing some compensation for the barriers previously discussed.

5.4. Methodological Reflections and Limitations

5.4.1. Reflection on the use of questionnaires and EDA

The use of questionnaires in this research was overall beneficial in gathering a comprehendible overview of the use of SCERTS in this EPS. However, the questionnaire did demonstrate some limitations.

The questionnaire limited the richness of data, providing mainly categorical data which restricted the depth of the exploration. However, the offer of open-ended sections for participants to provide more information for some questions was received well, offering a small amount of detail and clarification at times. This was beneficial to the explorative aim of the research and did not cause difficulties with the analysis, which had been raised as a potential complexity.

During the development of the questionnaire, all questions were kept categorical in order to maintain consistency throughout and for ease of completion for the EP, reducing the time needed to contemplate answers to open-ended questions, as well as consistency for the analysis. However, on reflection, some questions may have been better posed as scaled, rating, or open-ended questions (nominal or qualitative data). For example (table 5.1):

<table>
<tr><th>Original question</th><th>Proposed changes</th></tr>
<tr><td>Thinking about when you have drawn on/used the SCERTS approach, on average how confident did you feel in your choice of intervention/support following the assessment, compared to other assessment tools typically drawn on?

O More confident

O Less confident
O About the same

O Unsure</td><td>How confident did you feel in your choice of intervention/support following the use of the SCERTS model, compared to other assessment tools typically drawn on:

(where 0 is not at all confident, and 10 is very confident)

0_1_2_3_4_5_6_7_8_9_10</td></tr>
<tr><td>How would you like to use the SCERTS approach in the future? Tick as many as appropriate. Boxes can be left blank if you are unsure.

<table><tr><td></td><td>Statutory</td><td>Tribunal</td><td>Other</td><td>Would not use</td></tr><tr><td>SAP</td><td></td><td></td><td></td><td></td></tr><tr><td>SIA</td><td></td><td></td><td></td><td></td></tr><tr><td>Observation tools</td><td></td><td></td><td></td><td></td></tr><tr><td>Other</td><td></td><td></td><td></td><td></td></tr></table></td><td>How would you like to use the SCERTS approach in the future?

_____

_____

_____

_____</td></tr>
</table>

Table 5.1. Proposed changes to the questionnaire questions

These alterations would have resulted in a richer data set. In addition, these types of questions could also have been analysed using the EDA approach, and therefore would not have caused difficulties in analysis.

On further reflection regarding the questionnaire development it would have been useful to have asked questions exploring why EPs do *not* use the approach, in addition to how EPs *are* using the approach. This may have provided a greater understanding of the prevalence of the views regarding the barriers to using the approach. While the focus group data did collect information regarding barriers to

use, prevalence of these views could not be gathered through this method and would have best been gathered through the questionnaire method.

The use of self-completed questionnaires did limit the clarity of questions, with some inconsistencies in the responses. For example, one EP reported wanting to use SCERTS both in “various ways” in the future and “not at all”. It may be that the participant did not understand the question and was unable to gain clarity, or it may simply be an error. I was unable to query this with the participant due to the self-report and anonymous design of the research, therefore this response needed to be removed from the data set to minimise the impact of an unclear response.

The use of EDA in analysis was beneficial in reframing the categorical data, although it is acknowledged that this analysis method is limited in what it can offer. For example, it cannot determine patterns in whole data sets and hypothesise future patterns as other statistical analyses can. As discussed, categorical data restricts the methods of analysis which can be used as the data cannot be interrogated using statistics in the way that nominal data can, therefore, the type of analysis used was felt to be most appropriate to the data set.

5.4.2. Reflection on use of focus groups and thematic analysis

The focus groups enabled clarification of the findings from the questionnaires, reducing the impact of some of the limitations described in section 5.4.1. Further, the focus groups provided great insight to the ways in which SCERTS is used in EP practice and provided the most helpful data for the aims of this research.

The focus groups created a forum for EPs to discuss various ways of using SCERTS and enabled reflection on the use of the approach. This discussion revealed what appeared to be greater use of the approach flexibly, such as using the theory in consultation. This type of approach was asked about in the questionnaire, however, it may be that only in discussion this became clearer. Some EPs may not have consciously been aware that they had drawn on the SCERTS model at times until the discussion with colleagues took place. Therefore, the focus groups produced a richer data set.

The focus groups allowed for a discussion of views, including agreements and disagreements on various topics. This was beneficial in understanding whether views were held by individuals or the wider team. However, the data remains qualitative and cannot be quantified. This is a limitation of this approach as it would be beneficial to the research aims to understand the extent of agreement/disagreement in numerical terms.

Focus groups are always limited by the extent of information shared by the participants. There is no way to confirm whether the discussions reflect actual use of the approach in practice, or whether there is a level of social bias, misperception, or misreporting. Whilst this needs to be considered in the interpretation of the results, the topic was uncontroversial and the participants knew each other well, therefore EPs may have already been aware of the extent of use of each other's use of the approach in practice. This may reduce the impact of these potential limitations.

The semi-structured format of the focus groups was beneficial in providing some flexibility for participants to raise what they considered most important. By utilising

a focus group format, participants shared views on topics which may have been missed in individual interviews. For example, the use of SCERTS in determining appropriate outcomes was raised by one EP and other EPs reflected they had used SCERTS in this way also, although they may not have raised this themselves without prompting. As the topics were determined by the participants, researcher bias was minimised, improving the validity of the data collected.

Given the number of participants taking part in the focus groups and the overlap of topics shared across all three focus groups, the saturation point was deemed to have been met. Therefore, I felt this was an effective method of collecting qualitative data regarding SCERTS, particularly given the larger numbers of participants and the short time scales. It would have been challenging to conduct, transcribe, and analyse over 20 individual interviews. The thought paid to the practicalities around the focus groups enabled this high level of participation which may not have been achieved through other methods, such as individual interviews. In addition, discussing the use and impact of SCERTS together reflected the team spirit of training and developing the use of SCERTS together in the service.

Finally, the use of thematic analysis to analyse the qualitative data resulted in some limitations. Due to the time-bound nature of this thesis the data was coded by me as a solo researcher. The reliability of the analysis would have been improved by having a second coder to compare coding. As this was not possible, the current analysis may reflect my own interpretation of the results and therefore there may be a level of researcher bias.

5.4.3. Reflection on the Research Design

This research focuses on a single traded local authority EPS. This limits the findings of this research to this service only, as each EPS has different pressures and impacts which may influence the use of the SCERTS approach in their practice. These include: the size of the service/number of EPs, experience and individual views of EPs, approach to service delivery, priorities of the service, and wider contextual and systemic impacts. Consequently, the results of this research cannot be generalised and are limited to the specific service involved in this research.

The research was conducted approximately 1-2 years after the majority of EPs received SCERTS training, therefore, the findings of this research are also bound by time. New approaches take time to embed in services and the wider community, and the results of this research may not be replicated if it were to be repeated in the future once the approach is more embedded, or once the approach has become historical.

The research was promoted with all EPs in the shire EPS. However, not all EPs chose to partake. The reasons EPs chose to/not to partake were not explored, therefore there may be participant biases impacting on the results of this research. In addition, it is important to note that, as the questionnaire data was anonymous, it is unknown whether the participants taking part in phase one of the research are also the same participants who took part in phase two of the research. However, it is assumed, given the size of the service, that there was a large overlap with many EPs partaking in both parts of the research.

Overall, the mixed methods approach used in this research was highly beneficial in triangulating data to improve the reliability of the results. Both the questionnaire and

focus groups have limitations to their use in this research, as described, however, by combining the methods the limitations were minimised or counterbalanced. The pragmatic nature of the research enabled the aims of the research to be met and the research questions to be appropriately answered.

5.5. Summary of Chapter

This chapter has discussed and interpreted the results of the research, answering the two research questions: "*How is the SCERTS approach used in EP practice?*" and "*What impact has the SCERTS approach had on EP practice?"*

The next chapter concludes the research by presenting possible next steps and further research opportunities, as well as the implications of these findings for EP practice.

CHAPTER SIX

IMPLICATIONS FOR PROFESSIONAL PRACTICE

AND FINAL CONCLUSIONS

6.1. Overview of Chapter Six

This chapter presents recommendations for next steps in the development of SCERTS within the EPS at the centre of this research and more widely. Future research is then suggested. Finally, the chapter concludes the research by presenting the implications of this research for EP practice.

6.2. Next Steps and Future Research

Prizant et al. (2006) acknowledges the potential for practical barriers in professional practice and advocate flexible use of SCERTS to suit the needs of the situation. However, little was known about the use and barriers in EP practice prior to the current research. This research has highlighted a number of developments which could reduce the barriers and improve the use of the approach in EP practice.

Firstly, this research has demonstrated the benefits of having the opportunity to discuss and share practice with colleagues. Many of the flexible approaches of SCERTS are not formally documented. Practice may be shared incidentally in offices, however, investing time to share inventive, creative, or flexible methods of using SCERTS is likely to improve use of the approach in EP practice. It may also improve EP confidence in using the approach, reducing the impact of this as a barrier. This recommendation may also be beneficial for wider EP practice outside of the use of SCERTS – formal forums for sharing good practice across various approaches may be beneficial to enhancing EP practice overall, providing cost and time effective CPD opportunities.

Secondly, this research highlighted practical difficulties as a direct consequence of the complex language used in SCERTS, and the intimidating nature of the manuals. This barrier was also found by Molteni et al. (2013) in the school setting, indicating this may be a wider concern regarding the SCERTS model. Therefore, it may be beneficial for a simplified, practical, stepped version of the manuals to be published alongside the comprehensive two-volume manuals (Prizant et al. 2006). Within the EPS involved in this research, it may be beneficial to invest more rapidly in a service-specific quick-start manual whilst SCERTS continues to be embedded by EPs in their practice.

As EPs typically do not implement the interventions, further training to school staff would be helpful – more knowledge in the school may increase use in consultation, as it will then be comparatively quicker and easier to understand and implement.

Finally, it would be beneficial to conduct further research into the use of SCERTS in other EP services to determine whether the findings of this research are specific to the particular EPS, or whether the findings are replicated in other EPSs. It would also be beneficial to reassess the use of SCERTS in this EPS following service-level responses to the barriers highlighted in this research, to determine whether these translate to practical improvements of the use of SCERTS in practice. It may also be beneficial to widen the research to explore end user perspectives, such as families and school staff, on the use of SCERTS following EP involvement and potential barriers to its use in daily practice with the child.

6.3. Conclusion and Implications for EP Practice

Extant literature regarding SCERTS focuses predominantly on efficacy of the approach, with emerging literature providing insight to the practicalities of utilising the approach within special schools. This research has provided further evidence that it is crucial to consider the practicalities of an approach in addition to the evidence base of the model.

This research offers an understanding of how the approach is currently used in this EPS, as well as the impact of SCERTS on the practice of the EPs involved in the research. This provides the service with a pragmatic evaluation of the approach and offers other EPSs examples of the benefits of investing in SCERTS training. It also offers insight to key barriers which may impact on the approach in EP practice. This provides the service involved in this research with knowledge and understanding of the current limitations perceived by EPs, as well as offering recommendations for next steps to improve the use of the approach within this service. As a result of this, the service is able to make informed, evidence-based decisions to reduce the impact of the barriers, therefore improving the use of an approach deemed to be beneficial in EP practice. This is of particular benefit given the previous heavy investment from the service. Furthermore, this study may also inform the creators of the approach, and other researchers, of potential developments for SCERTS for improved future use.

This research also offers evidence of the use of the approach in practice which may inform other EPSs considering investment in the approach. Whilst the results cannot be generalised to other services, due to the case study approach to this research and the unique and complex factors affecting each EPS, this research provides

insight to one possible outcome of investment. The individual dynamics and factors affecting each EPS (Bronfenbrenner, 1979) must be considered during the decision-making and investment period. For example, the investment of this service in the whole-service approach to training was considered highly beneficial by all EPs, improving the use of the approach overall. Having an understanding of these potential benefits may offer other EPSs support in the decision-making process towards investing in a similar way, justifying the heavy initial investment in training.

Furthermore, this research highlights the importance of considering a variety of systemic factors, as well as efficacy, when investing in training in any approach. Such factors to consider are: models of working (e.g. traded/non-traded), training methods, collegial support network, managerial support network, and ongoing support. For this EPS, these are helpful to consider for future training. For other EPSs this is helpful in considering potential barriers in advance, before they materialise into limitations, which are then more difficult to challenge or change.

Finally, this research highlights the importance of the consideration of pragmatics for all types of assessment used in EP practice, beyond SCERTS. It is beneficial to consider the flexible usage of any assessment tool in order to reduce barriers to use, particularly the consideration of time-effective approaches to EP assessment. In addition, the flexible and dynamic use of many assessments can provide valuable insight to a child's needs without rigid fidelity to an assessment's formal procedures. This research also indicates the potential benefits of collegial support for all types of EP assessment. It provides support for EPSs offering regular forums to share practice, particularly creative or alternative uses of a range of assessment tools, offering ongoing CPD to build confidence in a variety of assessment approaches.

Overall, this research has demonstrated: how SCERTS can be used in EP practice, it has outlined the perceived and theoretical advantages and disadvantages of the approach, it has highlighted the strengths and barriers of the approach in practice, and raised further impacts of the approach on EP practice. It has indicated possible improvements to reduce the barriers to the approach, as well as wider implications for the use of SCERTS and all assessment tools in EP practice.

References

Agar, M. and MacDonald, J. (1995). Focus groups and ethnography. *Human Organization,* 54(1), pp.78-86.

All Party Parliamentary Group on Autism. (2017). *Autism and education in England 2017.* London: Author.

Allen, A. and Hardy, J. (2013). The Future of Educational Psychology. In: Arnold, C. and Hardy, J. (Eds.) *British Educational Psychology the First Hundred Years.* Leicester: The British Psychological Society, pp.141 -149.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders. 5th ed*. Arlington, VA: American Psychiatric Association.

Andari, E., Duhamel, J. R., Zalla, T., Herbrecht, E., Leboyer, M., and Sirigu, A. (2010). Promoting social behavior with oxytocin in high-functioning autism spectrum disorders. *Proceedings of the National Academy of Sciences*, *107*(9), pp.4389-4394.

Anzalone, M.E. and Williamson, G. G. (2000). Sensory processing and motor performance in autism spectrum disorders. In: Wetherby, A.M. and Prizant, B.M. (Eds.), *Autistic spectrum disorders: A transactional developmental perspective* (pp. 143-166). Baltimore, MD: Paul H. Brookes Publishing.

Association of Educational Psychologists (AEP). (2011). *The Delivery of Educational Psychology Services.* Durham: AEP.

Association of Educational Psychologists (AEP). (2008). *Educational psychologists in multi-disciplinary settings: Investigations into the work of educational psychologists in children's services authorities*, Durham: AEP.

Atkinson, C., Corban, I., and Templeton, J. (2011). Educational Psychologists' use of therapeutic interventions: Issues arising from two explanatory case studies. *Support for Learning,* 26(4), pp.160-167.

Attwood, T. (1998). *Asperger's Syndrome: A guide for parents and professionals.* London: Jessica Kingsley.

Attwood, T., Frith, U., and Hermelin, B. (1988). The understanding and use of interpersonal gestures by autistic and Down's syndrome children. *Journal of Autism and Developmental Disorders, 18*(2), pp.241– 257.

Ayson, C. (2011). The Use of Music Therapy to Support the SCERTS Model Objectives for a Three-Year-Old Boy with Autism Spectrum Disorder in New Zealand. *The New Zealand Journal of Music Therapy, 9*, pp.7-31.

Baer, D.M., Wolf, M.M. and Risley, T.R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*. 1(1), pp.91–97.

Bailey, K. (2007). *Methods of Social Research.* New York: The Free Press.

Baio, J., Wiggins, L., Christensen, D. L., Maenner, M. J., Daniels, J., Warren, Z., ... and Durkin, M. S. (2018). Prevalence of autism spectrum disorder among children aged 8 years—autism and developmental disabilities monitoring network, 11 sites, United States, 2014. *MMWR Surveillance Summaries*, *67*(6), pp.1-23.

Baird, G., Simonoff, E., Pickles, A., Chandler, S., Loucas, T., Meldrum, D., and Charman, T. (2006). Prevalence of disorders of the autism spectrum in a population cohort of children in South Thames: The Special Needs and Autism Project (SNAP). *The Lancet*, 368 (9531), pp.210-215.

Banathy, B. H. (1991). *Systems Design of Education: A Journey to Create the Future*. New Jersey: Educational Technology Publications.

Barbour, R. (2008). *Doing focus groups*. London: Sage.

Barnes, R. E., and McCabe, H. (2012). Should we welcome a cure for autism? A survey of the arguments. *Medicine, Health Care and Philosophy*, *15*(3), pp.255-269.

Baron-Cohen, S. (1989). Perceptual role taking and protodeclarative pointing in autism. *British Journal of Developmental Psychology*, 7(2), pp.113– 127.

Baron-Cohen, S. (2000). Theory of mind and autism: A fifteen year review. In: Baron-Cohen, S., Tager-Flusberg, T., and Cohen, D.J. (Eds.), *Understanding other minds: Perspectives from developmental cognitive neuroscience* (pp. 3-20). New York, NY, US: Oxford University Press.

Baron-Cohen, S. (2002). The extreme male brain theory of autism. *Trends in Cognitive Sciences, 6*(6), pp.248-254.

Baron-Cohen, S., Allen, J., and Gillberg, C. (1992). Can autism be detected at 18 months? The needle, the haystack, and the CHAT. *The British Journal of Psychiatry*, 161(6), pp.839– 843.

Baron-Cohen, S., Leslie, A. M., and Frith, U. (1985). Does the autistic child have a "theory of mind"? *Cognition*, *21*(1), pp.37-46.

Baron-Cohen, S., Leslie, A. M., and Frith, U. (1986). Mechanical, behavioral and intentional understanding of picture stories in autistic-children. *British Journal of Developmental Psychology*, 4, pp.113–125.

Barrow, W. and Hannah, E. F. (2012). Using computer-assisted interviewing to consult with children with autism spectrum disorders: An exploratory study. *School Psychology International,* 33, pp.450–464.

Bates, E. (1979). *The emergence of symbols: Cognition and communication in infancy*. Academic Press.

Baxter, J. and Frederickson, N. (2005). Every Child Matters: Can educational psychology contribute to radical reform? *Educational psychology in Practice*, *21*(2), pp.87-102.

Bazeley, P. (2009). Integrating data analyses in mixed methods research. *Journal of Mixed Methods Research, 3*(3)*,* pp.203-207.

Bechofer, F. and Patterson, L. (2000). Principles of research design in the social sciences. London: Routledge.

Behrens, J. T., Dicerbo, K. E., Yel, N., and Levy, R. (2013). Exploratory data analysis. In: Schinka J. A., Velicer, W. F., and Weiner, I. B. (Eds), *Handbook of Psychology (2nd Edition) pp. 34-70*. Holboken, NJ: Wiley.

Bellini, S., Akuuian, J., and Hopf, A. (2007). Increasing social engagement in young children with autism spectrum disorders using video self-modelling. *School Psychology Review*, 36, pp.80–90.

Bennett, P. L. (1998). Special educational needs tribunals: An overview for educational psychologists. *Educational Psychology in Practice*, *14*(3), pp.203-208.

Bercow Review Advisory Group. (2008). *The Bercow Report. A review of services for children and young people (0–19) with speech, language and communication needs*, Nottingham: DCSF Publications.

Blackburn, R. (2010). Within and without autism. *Good Autism Practice Journal.* 11(1), pp.9-13.

Bond, C., Symes, W., Hebron, J., Humphrey, N., Morewood, G., and Woods, K. (2016). Educational interventions for children with ASD: A systematic literature review 2008–2013. *School Psychology International*, *37*(3), pp.303-320.

Bozic, N., Lawthom, R. and Murray, J. (2018). Exploring the context of strengths – a new approach to strength-based assessment, *Educational Psychology in Practice, 34(*1), pp.26-40.

Brace, I. (2008). *Questionnaire Design: How to Plan, Structure and Write Survey Material for Effective Market Research.* London: Kogan Page.

Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), pp.77-101.

Breakwell, G. M., Fife-Schaw, C., Hammond, S. M., and Smith, J. (2006). Research Methods in Psychology: 3rd Edition. London: Sage Publications.

Breakwell, G., Hammond, S. M., Fife-Schaw, C. and Smith, J. A. (2007). Research methods in psychology. London: Sage.

British Psychological Society (2010). *Professional supervision: Guidelines for practice for educational psychologists*. Leicester: British Psychological Society.

British Psychological Society (2018). Code of Ethics and Conduct. Leicester: The British Psychological Society.

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, Massachusetts: Harvard University Press.

Brooks, J., McCluskey, S., Turley, E., and King, N. (2015). The utility of template analysis in qualitative psychology research. *Qualitative Research in Psychology*, *12*(2), pp.202-222.

Brown, K. and White, K. (2006). *Exploring the evidence base for Integrated Children's Services*, Edinburgh: Scottish Executive Education Department Publications.

Brownell, M. T. and Walther-Thomas, C. (2001). Steven Shore: Understanding the Autism Spectrum— What Teachers Need to Know. *Intervention in School and Clinic*, *36*(5), pp.293–299.

Brugha, T., Cooper, S., McManus, S., Purdon, S., Smith, J., Scott, F., Spiers, N., and Tyrer, F. (2012). *Estimating the prevalence of autism spectrum conditions in*

adults: extending the 2007 Adult Psychiatric Morbidity Survey. Leeds: NHS Information Centre for Health and Social Care.

Brugha, T., McManus, S., Meltzer, H., Smith, J., Scott, J., Purdon, S., Harris, J., and Bankart, J. (2009). *Autism spectrum disorders in adults living in households throughout England: report from the Adult Psychiatric Morbidity Survey, 2007*. Leeds: NHS Information Centre for Health and Social Care.

Brunsdon, V. E. and Happé, F. (2014). Exploring the 'fractionation' of autism at the cognitive level. *Autism*, 18(1), pp.17– 30.

Burnham, S. (2012). Realists or pragmatists? "Reliable evidence" and the role of the educational psychologist. *Educational Psychology in Practice*, 29, pp.19–35.

Cameron, A. and Lart, R. (2003). Factors promoting and obstacles hindering joint working: A systematic review of the research evidence. *Journal of Integrated Care*, 11(2), pp.9–17.

Cannon, W. B. (1932). *The wisdom of the body.* New York: Norton.

Carpenter, M. and Tomasello, M. (2000). Joint attention, cultural learning, and language acquisition: Implications for children with autism. In Wetherby, A. M. and Prizant, B. M. (Eds.), *Communication and language intervention series; Vol. 9. Autism spectrum disorders: A transactional developmental perspective* (pp. 31-54). Baltimore: Paul H Brookes Publishing.

Chawarska, K. and Shic, F. (2009). Looking but not seeing: Atypical visual scanning and recognition of faces in 2 and 4-year-old children with autism spectrum disorder. *Journal of autism and developmental disorders*, *39*(12), pp.1663-1672.

Children Act. (2004). London: HMSO.

Christie, R., Hetherington, C., and Parkes, J. (2000). Consultation: A team approach to keeping consultation alive. *Educational Psychology in Practice, 16*(1), pp.41–46.

Cicchetti, D., Ackerman, B. P., and Izard, C. E. (1995). Emotions and emotion regulation in developmental psychopathology. *Development and psychopathology*, *7*(1), pp.1-10.

Clarke, D. (2004). Structured Judgement Methods: The best of both worlds? In: Todd, Z., Nerlich, B., Clarke, D. and McKeown, S. (Eds). *Mixing methods in psychology: The integration of qualitative and quantitative methods in theory and practice.* London: Psychology Press.

Cohen, L., Manion, L., and Morrison, K. (2013). *Research Methods in Education.* London: Routledge.

Cohen, M. and Gerhardt, P. (2016). *Visual Supports for People with Autism: A Guide for Parents and Professionals.* USA: Woodbine House Publishers.

Coolican, H. (2017). *Research methods and statistics in psychology*. Psychology Press.

Craig, J., Huber, J. and Lownsbrough, H. (2004). *Schools out – Can teachers, social workers and health staff learn to live together?* London: Hay Group UK.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage publications.

Creswell, J. W. and Plano Clark, V. L. (2007*). Designing and conducting Mixed Methods Research.* Thousand Oaks, CA: Sage Publications.

Creswell, J. W., Plano Clark, V. L., Gutmann, M., and Hanson, W. (2003). Advanced mixed methods research designs. In Tashakkori, A. and Teddlie, C. (Eds.), *Handbook of mixed methods in social and behavioural research.* (pp.209-240). Thousand Oaks, CA: Sage.

Davis, E. L., Levine, L. J., Lench, H. C., and Quas, J. A. (2010). Metacognitive emotion regulation: Children's awareness that changing thoughts and goals can alleviate negative emotions. *Emotion*, *10*(4), pp.498-510.

Dawson, G., Hill, D., Spencer, A., Galpert, L., and Watson, L. (1990). Affective exchanges between young autistic children and their mothers. *Journal of abnormal child psychology*, *18*(3), pp.335-345.

Denzin, N. K. (2017). *The research act: A theoretical introduction to sociological methods*. London: Routledge.

Denzin, N., & Lincoln, Y. (2000). *Handbook of qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.

Department for Education (DfE). (2015). *Special educational needs and disability code of practice: 0 to 25 years*. London: HMSO.

Department for Education (DfE). (2016). *Special educational needs in England: January 2016*. London: HMSO.

Department for Education and Department of Health (2014). *Special educational needs and disability code of practice: 0 to 25 years*. Available at: www.gov.uk/government/publications/send-code-of-practice-0-to-25 [Accessed on 15th April 2019].

Department for Education and Employment (DfEE). (2000). *Educational Psychology Services (England): Current Role, Good Practice and Future Directions. The Research Report.* London: HMSO.

Department for Education. (2012). Advanced training materials for autism; dyslexia; speech, language and communication; emotional, social and behavioural difficulties; moderate learning difficulties: Evidence base for educational interventions. England: Crown. Available at: www.advanced-training.org.uk/module1/M01U12.html#. [Accessed 15th April 2019].

Department for Education. (2014). *Special Educational Needs in England: January 2014*. London: HMSO.

Department for Education. (2016). *Special Educational Needs in England: January 2016*. London: HMSO.

Department for Education. (2018). *Statutory Framework for the Early Years Foundation Stage*. Available at: https://www.gov.uk/government/publications/early-years-foundation-stage-framework--2 (Accessed: 25 May 2019).

Department for Educational Studies (DES). (1978). *Special Educational Needs.* London: HMSO.

Dessent, A. (1996). *Options for partnership between health, education and social services*, Tamworth: NASEN publications.

Dewey, J. (2008a). Experience and nature. In: Boydston, J. and Hook, S. (Eds.), *The later works of John Dewey, 1925-1953* (Vol. 1, pp. 1-437). Carbondale: Southern Illinois University Press. (Original work published 1925)

Dewey, J. (2008b). Reconstruction in philosophy. In: Boydston, J. and Ross, R. (Eds.), *The middle works of John Dewey, 1899-1924* (Vol. 12, pp. 77-202). Carbondale: Southern Illinois University Press. (Original work published 1920)

DiGangi, G., (2017). *Paediatric Disorders of Regulation in Affect and Behavior: A Therapist's Guide to Assessment and Treatment, Second Edition.* San Diego, CA: Academic Press.

Dingfelder, H. E. and Mandell, D. S. (2011). Bridging the research-to-practice gap in autism intervention: An application of diffusion of innovation theory. *Journal of autism and developmental disorders*, *41*(5), pp.597-609.

Donaldson, Z. R., and Young, L. J. (2008). Oxytocin, vasopressin, and the neurogenetics of sociality. *Science*, *322*, pp.900-904.

DuBois, D., Ameis, S. H., Lai, M. C., Casanova, M. F., and Desarkar, P. (2016). Interoception in autism spectrum disorder: A review. *International Journal of Developmental Neuroscience*, 52, pp.104– 111.

Dunsmuir, S. and Hardy, J. (2016). *Delivering Psychological Therapies in Schools and Communities*. Leicester: British Psychological Society.

Dunsmuir, S. and Leadbetter, J. (2010). *Professional supervision: Guidelines for practice for educational psychologists*. Leicester: British Psychological Society.

Dunsmuir, S., Clifford, V. and Took, S. (2006). Collaboration between educational psychologists and speech and language therapists. *Educational Psychology in Practice*, 22(2), pp.125–140.

Durand, V. M. (1993). Problem behaviour as communication. *Behaviour Change*, *10*(4), pp.197-207.

Durlak, J. A. and DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*, *41*, pp.327–350.

Education Act. (1981). London: HMSO.

Fallon, K., Woods, K. and Rooney, S. (2010). A Discussion of the Developing Role of Educational Psychologist within Children's Services. *Educational Psychology in Practice,* 26(1), pp.1-23.

Farouk, S. (1999). Consulting with Teachers. *Educational Psychology in Practice, 14*(4), pp.253-263.

Farrell, P., Woods, K., Lewis, S., Rooney, S., Squires, G., and O'Connor, M. (2006). *A Review of the Functions and Contribution of Educational Psychologists in England and Wales in the light of Every Child Matters: Change for Children.* Nottingham: DfEE.

Feilzer, M. Y. (2010) Doing mixed methods research pragmatically: implications for the rediscovery of Pragmatism as a research paradigm. *Journal of Mixed Methods Research, 4*(1), pp.6-16.

Fleming, B., Hurley, E., and Mason, J. (2015). *Choosing Autism Interventions: A Research Based Guide.* Pavilion Publishing and Media Ltd.

Fletcher-Watson, S., McConnell, F., Manola, E., and McConachie, H. (2014). Interventions based on the Theory of Mind cognitive model for autism spectrum disorder (ASD). *Cochrane Database of Systematic Reviews*, (3).

Fombonne, E., Quirke, S. and Hagen, A. (2011). Epidemiology of pervasive developmental disorders. In: Amaral D.G., Dawson G. and Geschwind, D.H. (Eds.) *Autism spectrum disorders* (pp.90-111). New York: Oxford University Press.

Fontani, S. (2015). The SCERTS System. An integrated approach for the emotional regulation of the student with Autism Spectrum Disorders. *Italian Journal of Special Education for Inclusion*, *3*(1), pp.197-210.

Frith, U. (2003). *Autism: Explaining the enigma (2nd ed.).* Oxford: Blackwell

Frith, U. and Happé, F. (1994). Autism — beyond theory of mind. *Cognition, 50*(1), pp.115–132.

Frith, U., Morton, J., and Leslie, A. M. (1991). The cognitive basis of a biological disorder: Autism. *Trends in Neurosciences, 14*(10), pp.433– 438.

Fujisawa, T. X., Tanaka, S., Saito, D. N., Kosaka, H., and Tomoda, A. (2014). Visual attention for social information and salivary oxytocin levels in preschool children with

autism spectrum disorders: an eye-tracking study. *Frontiers in neuroscience*, *8*, pp.295.

Galbally, M., Lewis, A. J., IJzendoorn, M. V., and Permezel, M. (2011). The role of oxytocin in mother-infant relations: a systematic review of human studies. *Harvard review of psychiatry*, *19*(1), pp.1-14.

Gersch, I. and Teuma, A. (2005). Are Educational Psychologists Stressed? A Pilot Study of Educational Psychologists' Perceptions, *Educational Psychology in Practice, 21(*3), pp.219-233.

Gillham, B. (1978). *Reconstructing educational psychology*. London: Taylor and Francis.

Gopnik, A. and Astington, J. W. (1988). Children's understanding of representational change and its relation to the understanding of false belief and the appearance-reality distinction. *Child development*, *59*(1), pp.26-37.

Gould, J. and Ashton-Smith, J. (2011). Missed diagnosis or misdiagnosis? Girls and women on the autism spectrum. *Good Autism Practice, 12*(1), pp.34-41.

Gray, C. (2015). *The New Social Stories Book.* Future Horizons.

Greathead, S., Yates, R., Hill, V., Kenny, L., Croydon, A., and Pellicano, E. (2016). Supporting children with severe-to-profound learning difficulties and complex communication needs to make their views known. *Topics in Language Disorders*, 36(3), pp.217-244.

Greene, J. C., Caracelli, V. J., and Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, *11*(3), pp.255-274.

Greenspan, S.I. and Wieder, S. (1997). Developmental Patterns and Outcomes on Infants and Children with Disorders of Relating and Communicating: A Chart Review of 200 Cases of Children with Autistic Spectrum Diagnoses. *Journal of Developmental and Learning Disorders,* 1, pp.87–141.

Greig, A. and MacKay, T. (2005). Asperger's syndrome and cognitive behaviour therapy: New applications for educational psychologists. *Educational and Child Psychology*, 22, pp.4–15.

Guastella, A. J., Einfeld, S. L., Gray, K. M., Rinehart, N. J., Tonge, B. J., Lambert, T. J., and Hickie, I. B. (2010). Intranasal oxytocin improves emotion recognition for youth with autism spectrum disorders. *Biological psychiatry*, *67*(7), pp.692-694.

Guba, E. (1990). *The paradigm dialog*. Newbury Park, CA: SAGE.

Guest, G., MacQueen, K. M., and Namey, E. E. (2012). *Applied thematic analysis*. London: Sage.

Gyurak, A., Gross, J. J., and Etkin, A. (2011). Explicit and implicit emotion regulation: a dual-process framework. *Cognition and emotion*, *25*(3), p.400-412.

Hadwin, J., Baron-Cohen, S., Howlin, P., and Hill, K. (1996). Can we teach children with autism to understand emotions, belief, or pretence? *Development and Psychopathology, 8*(2), pp.345–365.

Happé, F. (1994). An advanced test of theory of mind: Understanding of story characters' thoughts and feelings by able autistic, mentally handicapped and normal children and adults. *Journal of Autism and Developmental Disorders*, *24*, pp.129-154.

Happé, F. and Fletcher-Watson, S. (2019). *Autism: A New Introduction to Psychological Theory and Current Debate*. Routledge.

Happé, F. and Frith, U. (2006). The weak coherence account: detail-focused cognitive style in autism spectrum disorders. *Journal of autism and developmental disorders*, *36*(1), pp.5-25.

Happé, F., Ronald, A., and Plomin, R. (2006). Time to give up on a single explanation for autism. *Nature Neuroscience, 9*(10), pp.1218-1220.

Harbin, G. (1996). The challenge of coordination. *Infants and Young Children*, 8(3), pp.68–76.

Hayes, M. J. (2015). An evaluation of the impacts of the Social Communication Emotional Regulation and Transactional Support (SCERTS) Model on multidisciplinary collaboration. *International Journal for Cross-Disciplinary Subjects in Education*, *5*(1), pp.2411-2415.

Health and Care Professions Council (HCPC). (2015). Standards of proficiency: Practitioner psychologists. London: HCPC.

Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*. Guilford Press.

HM Treasury. (2010). *Spending Review.* Crown Copyright. Ref: cm7942.

Hogan, A. (2018). *A Multidisciplinary Approach to the Treatment of Autism Spectrum Disorders: A Phenomenological Study of the Lived Experiences of Parents, Educators and Clinicians* (Doctoral dissertation, Lamar University-Beaumont).

Holden, B. and Gitlesen, J. P. (2006). A total population study of challenging behaviour in the county of Hedmark, Norway: Prevalence and risk markers. *Research in Developmental Disabilities, 27,* pp.456-465.

Hollander, E., Bartz, J., Chaplin, W., Phillips, A., Sumner, J., Soorya, L., ... and Wasserman, S. (2007). Oxytocin increases retention of social cognition in autism. *Biological psychiatry*, *61*(4), pp.498-503.

Hoyne, N. and Cunningham, Y. (2019). Enablers and barriers to Educational Psychologists' use of therapeutic interventions in an Irish context, *Educational Psychology in Practice*, 35(1), pp.1-16.

Hydén, L. C. and Bülow, P. H. (2003). Who's talking: drawing conclusions from focus groups—some methodological considerations. *International Journal of Social Research Methodology*, *6*(4), pp.305-321.

Islam, S. N. (2013). *An investigation into educational psychologists' perceptions of traded service delivery, using soft systems methodology* (Doctoral thesis, University of Birmingham).

Jacob, S., Brune, C. W., Carter, C. S., Leventhal, B. L., Lord, C., and Cook Jr, E. H. (2007). Association of the oxytocin receptor gene (OXTR) in Caucasian children and adolescents with autism. *Neuroscience letters*, *417*(1), pp.6-9.

James, W. (1907). Pragmatism's conception of truth. *Engagements Across Philosophical Traditions, 4*(6), pp.141-155.

Johnson, R. B. and Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, *33*(7), pp.14-26.

Jones, C. R., Simonoff, E., Baird, G., Pickles, A., Marsden, A. J., Tregay, J., Happé, F., and Charman, T. (2018). The association between theory of mind, executive function, and the symptoms of autism spectrum disorder. *Autism Research, 11*, pp.95– 109.

Josephson, J. R. and Josephson, S.G. (1996). *Abductive inference: Computation, philosophy, technology.* Cambridge: Cambridge University Press.

Kasari, C. and Smith, T. (2013). Interventions in schools for children with autism spectrum disorder: Methods and recommendations. *Autism*, *17*, pp.254–267.

Katz, D., and R. L. Kahn. (1969). Common Characteristics of Open Systems. In: Emery, F. (Ed). *Systems Thinking*. Harmondsworth, England: Penguin Books Ltd.

Kenny, L., Hattersley, C., Molins, B., Buckley, C., Povey, C. and Pellicano, E. (2016). Which terms should be used to describe autism? Perspectives from the UK autism community. *Autism, 20*(4), pp.442-462.

Kientz, M. A. and Dunn, W. (1997). A comparison of the performance of children with and without autism on the Sensory Profile. *The American Journal of Occupational Therapy*, *51*(7), pp.530-537.

King, N. (2012). Doing template analysis. In: Symon, G. and Cassell, G., (Eds). *Qualitative organizational research: Core methods and current challenges, p426-450*. London: Sage.

Klin, A., Jones, W., Schultz, R., Volkmar, F., and Cohen, D. J. (2002). Visual fixation patterns during viewing of naturalistic social situations as predictors of social competence in individuals with autism. *Archives of General Psychiatry, 59*, pp.809-816.

Koegel, L., Koegel, R., Harrower, J., and Carter, C. (1999). Pivotal response intervention I: Overview of approach. *Journal of the Association for Persons with Severe Handicaps, 24*(3)*,* pp.174–185.

Koegel, L., Koegel, R., Shoshan, Y., and McNerney, E. (1999). Pivotal response intervention II: Preliminary long-term outcome data. *Journal of the Association for Persons with Severe Handicaps*, *24*(3), pp.186-198.

Koole, S. L. (2009). The psychology of emotion regulation: An integrative review. *Cognition and emotion*, *23*(1), 4-41.

Kratochwill, T. R. (2007). Preparing psychologists for evidence-based school practice: Lessons learned and challenges ahead. *American Psychologist*, *62*, pp.829–843.

Kross, E., Bruehlman-Senecal, E., Park, J., Burson, A., Dougherty, A., Shablack, H., ... and Ayduk, O. (2014). Self-talk as a regulatory mechanism: How you do it matters. *Journal of personality and social psychology*, *106*(2), pp.304-324.

Krueger, R. A. and Casey, M. A. (2014). *Focus groups: A practical guide for applied research*. London: Sage publications.

Lavrakas, P. (2004). Questionnaire. In: Lewis-Beck, M., Bryman, A., and Liao, T. (Eds). *The SAGE encyclopaedia of social science research methods*. CA: SAGE.

Law, J. and Durkin, C. (2000). Literacy skills of language-impaired children: Time for 'joined up' thinking? *Educational Psychology in Practice*, 16(1), pp.75–87.

Law, J., Lindsay, G., Peacey, N., Gascoigne, M., Soloff, N., Rodford, J. and Band, S. (2001). Facilitating communication between education and health services: The provision for children with speech and language needs. *British Journal of Special Education*, 28(3), pp.133–137.

Lewins, A. and Silver, C. (2007). *Using software in qualitative analysis: A step-by-step guide*. Los Angeles: Sage.

Limbert, E. M. (2017). *An evaluation of the effectiveness of the Local Early Autism Programme (LEAP)* (Doctoral thesis, University College London).

Lindsay, G. and Dockrell, J. (2004). Whose job is it? Parents' concerns about the needs of their children with language problems. *The Journal of Special Education*, 37(4), pp.225–235.

LoParo, D., and Waldman, I. D. (2015). The oxytocin receptor gene (OXTR) is associated with autism spectrum disorder: a meta-analysis. *Molecular psychiatry*, *20*(5), pp.640-646.

Lord, C. and Pickles, A. (1996). Language level and nonverbal social-communicative behaviors in autistic and language-delayed children. *Journal of the American Academy of Child & Adolescent Psychiatry*, *35*(11), pp.1542-1550.

Lovaas, O. (1987). Behavioral Treatment and Normal Education and Intellectual Functioning in Young Autistic Children. *Journal of Consulting and Clinical Psychology, 55,* pp.3–9.

Mackenzie, N. and Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues in Educational Research*, *16*(2), pp.193-205.

Marco, E., Hinkley, L., Hill, S., and Nagarajan, S. (2011). Sensory processing in autism: a review of neurophysiologic findings. *Pediatric Research, 69(5),* pp.48-54.

Martin, C., Drasgow, E., Halle, J., and Brucker, J. (2005). Teaching a child with autism and severe language delays to reject: Direct and indirect effects of functional communication training. *Educational Psychology: An International Journal of Experimental Educational Psychology, 25*(2), pp.287–304.

Martin, D. (2012). The ever-changing social perception of autism spectrum disorders in the United States. *Journal of Exploration in Social Sciences,* 1, pp.1-22.

Mawhood, L., Howlin, P., and Rutter, M. (2000). Autism and developmental receptive language disorder—A comparative follow-up in early adult life. I: Cognitive and language outcomes. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, *41*(5), pp.547-559.

McConnellogue, S. (2011) Professional roles and responsibilities in meeting the needs of children with speech, language and communication needs: joint working between educational psychologists and speech and language therapists, *Educational Psychology in Practice,* 27(1), pp.53-64.

Meighan, R. and Siraj-Blatchford, I. (1997). *A sociology of educating.* London: Continuum.

Meltzoff, A. N. (1990). Foundations for developing a concept of self: The role of imitation in relating self to other and the value of social mirroring, social modelling, and self-practice in infancy. In: Cicchetti, D. and Beeghly, M. (Eds.), *The John D. and Catherine T. MacArthur foundation series on mental health and development. The self in transition: Infancy to childhood* (pp. 139– 164). Chicago, IL: University of Chicago Press.

Mesibov, G. B., Shea, V., and Schopler, E. (2005). *The TEACCH approach to autism spectrum disorders*. Springer Science and Business Media.

Miller, A., and Frederickson, N. (2006). Generalisable findings and idiographic problems: Struggles and successes for educational psychologists as scientist-practitioners. In: Lane, D. and Corrie, S. (Eds), *The modern scientist practitioner: A guide to practice in psychology*. Hove: Routledge.

Modahl, C., Green, L. A., Fein, D., Morris, M., Waterhouse, L., Feinstein, C., and Levin, H. (1998). Plasma oxytocin levels in autistic children. *Biological psychiatry*, *43*(4), pp.270-277.

Molteni, P., Guldberg, K., & Logan, N. (2013). Autism and multidisciplinary teamwork through the SCERTS Model. *British Journal of Special Education*, *40*(3), pp.137-145.

Moore, D. J. (2015). Acute pain experience in individuals with autism spectrum disorders: A review. *Autism, 19*(4), pp.387– 399.

Morgan D. L. (1988) *Focus groups as qualitative research*. London: Sage.

Morgan, D. L. (1996). *Focus groups as qualitative research (Vol. 16).* Sage publications.

Morgan, D. L. (2014). Pragmatism as paradigm for social research. *Qualitative Inquiry*, *20*(8), pp.1045-1053.

Morgan, D. L. and Krueger, R. A. (1993). When to use focus groups and why. In: Morgan, D. (Ed). *Successful focus groups: Advancing the state of the art, pp.3-19*. London: Sage.

Morgan, L., Hooker, J., Sparapani, N., Reinhardt, V., Schatschneider, C., and Wetherby, A. (2018). Cluster Randomized Trial of the Classroom SCERTS Intervention for Elementary Students with Autism Spectrum Disorder. *Journal of Consulting and Clinical Psychology, 86*(7), pp.631-644.

Murphy, B., Cockburn, J. and Murphy, M. (1992) Focus groups in health research. *Health Promotion Journal of Australia, 2*(2), pp.37-40.

Murphy, J., Catmur, C., and Bird, G. (2018). Alexithymia is associated with a multidomain, multidimensional failure of interoception: Evidence from novel tests. *Journal of Experimental Psychology, 147*(3), pp.398-408.

Namey, E., Guest, G., Thairu, L., and Johnson, L. (2008). Data reduction techniques for large qualitative data sets. *Handbook for team-based qualitative research*, *2*(1), pp.137-161.

National Autistic Society (NAS). (2018). www.autism.org.uk/about/what-is/myths-facts-stats.aspx [Accessed: 17th May 2019].

National Institute for Health and Care Excellence (2013). *Autism Spectrum Disorder in Under 19s: Support and Management.* London: National Institute for Health and Care Excellence.

National Research Council. (2001). *Educating children with autism*. USA: National Academies Press.

Nkwi, P., Nyamongo, I., and Ryan, G. (2001). *Field research into socio-cultural issues: Methodological guidelines.* Cameroon: International Center for Applied Social Sciences, Research, and Training.

Odom, S., Boyd, B., Hall, L., and Hume, K. (2010). Evaluation of comprehensive treatment models for individuals with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 40*(4), pp.425-36.

Office for National Statistics. (2011). Available from: www.ons.gov.uk/census/2011census [Accessed 17th May 2019].

O'Neill J., Bergstrand, L., Bowman, K., Elliott, K., Mavin, L., Stephenson, S., and Wayman, C. (2010). The SCERTS Model: Implementation and Evaluation in a Primary Special School. *Good Autism Practice, 11*(1), pp.7-15.

Ozonoff V, S., Pennington, B. F., and Rogers, S. J. (1991). Executive function deficits in high-functioning autistic individuals —relationship to theory of mind. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 32*(7), pp.1081–1105.

Palikara, O., Lindsay, G., Cullen, M. and Dockrell, J. (2007). Working together? The practice of educational psychologists and speech and language therapists with

children with specific speech and language difficulties. *Educational and Child Psychology*, 24(4), pp.77–88.

Patton, M. Q. (1990). *Qualitative evaluation and research methods*. London: Sage Publications.

Pellicano, E., Maybery, M., Durkin, K., and Maley, A. (2006). Multiple cognitive capabilities/deficits in children with an autism spectrum disorder: “weak” central coherence and its relationship to theory of mind and executive control. *Development and Psychopathology, 18*(1), pp.77–98.

Pellicano, L., Dinsmore, A., and Charman, T. (2013) *A Future Made Together*. London: Institute of Education.

Piaget, J. (1971). *The language and thought of the child.* New York: World Publishing Co.

Premack, D. and Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences, 1*(4), pp.515– 526.

Prizant, B. M. and Fields-Meyer, T. (2015). *Uniquely human: A different way of seeing autism*. Simon and Schuster.

Prizant, B. M. and Laurent, A.C. (2011). Behavior is not the issue: An emotional regulation perspective on Problem Behavior. *Autism Spectrum Quarterly, 2*, pp.34-37.

Prizant, B. M. and Meyer, E. C. (1993). Socioemotional aspects of language and social-communication disorders in young children and their families. *American Journal of Speech-Language Pathology*, *2*(3), pp.56-71.

Prizant, B. M. and Wetherby, A. N. (2004). *The SCERTS model: Enhancing communication and socioemotional abilities of children with autism spectrum disorder*. Paul H. Brookes Publishers.

Prizant, B. M., Wetherby, A. M., Rubin, E., and Laurent, A. C. (2003). The SCERTS model: A transactional, family-centred approach to enhancing communication and socioemotional abilities of children with autism spectrum disorder. *Infants & Young Children*, *16*(4), pp.296-316.

Prizant, B. M., Wetherby, A. M., Rubin, E., Laurent, A. C., and Rydell, P. J. (2006). *The SCERTS: A comprehensive educational approach for children with autism spectrum disorders (Vol. 1 and Vol. 2).* Baltimore, ML: Brookes.

Prizant, B., Wetherby, A., Rubin, E. and Laurent, A. (2007) [online] [Accessed 28th March 2019] Available from: http://scerts.com/the-scerts-model/

Prizant, B.M. and Wetherby, A.M. (1989). Enhancing communication: From theory to practice. In: Dawson, G. (Ed.), *Autism: New perspectives on diagnosis, nature and treatment.* New York: Guilford Press.

Quill, K. A. (1995). *Teaching children with autism: Strategies to enhance communication and socialization*. Cengage Learning.

Randall, G., Druckman, D., Rozelle, R., and Baxter, J. (2006). Non-verbal behaviour as communication. In: Hargie, O. (Ed) *The Handbook of Communication Skills.* Abingdon: Routledge.

Reid, B. (2011). *Great Expectations*. London: The National Autistic Society.

Research Autism UK. (2019). Autism Interventions. Available from: www.researchautism.net/autism-interventions/alphabetic-list-interventions [Accessed: 25 April 2019].

Ridley, D. (2008). *The literature review: A step-by-step guide for students*. Thousand Oaks, CA: Sage.

Robinson, L. (2017). *Educational psychologists' intervention practices for children with autism spectrum disorder.* (Doctoral thesis, University of Manchester).

Robinson, L., Bond, C., and Oldfield, J. (2018). A UK and Ireland survey of educational psychologists' intervention practices for students with autism spectrum disorder, *Educational Psychology in Practice, 34(*1), pp.58-72.

Robson, C. (2002). *Real world research.* Oxford: Blackwell.

Robson, C. and McCartan, K. (2016). *Real world research*. Oxford: John Wiley & Sons.

Rubin, E. (2017). Training in SCERTS. Delivered July 2017.

Rumble, A. and Thomas, G. (2017). Reflections on the role of the educational psychologist within a multi-academy trust. *Educational Psychology Research and Practice*, *3*(1), pp.15-28.

Rutten A. (2007). Social groups and social skills groups. In: National Autistic Society (Ed). *Approaches to autism: an easy to use guide to many and varied approaches to autism*. London: National Autistic Society.

Saldaña, J. (2015). *The coding manual for qualitative researchers*. London: Sage.

Sasson, N. J., and Touchstone, E. W. (2014). Visual attention to competing social and object images by preschool children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 44*, pp.584–592.

Scherer, K. (1984). On the nature and function of emotion. A component process approach. In: Scherer, K. and Ekman, P. (Eds) *Approaches to emotion (pp.293-317).* New Jersey: Lawrence Erlbaum Associates.

Schuler, A. (1995). Thinking in autism: Differences in learning and development. In: Quill, K. (Ed.) *Teaching children with autism: strategies to enhance communication and socialisation (pp.11-32).* Albany, NY: Delmar.

Scott, R. W. (2008). *Organizations and organizing: Rational, natural, and open systems perspectives.* Upper Saddle River, NJ: Prentice Hall.

Scott, R. M. and Baillargeon, R. (2017). Early false belief understanding. *Trends in Cognitive Sciences, 21*(4), pp.237– 249.

Sedgwick, A. and Stothard, J. (2019). An exploration of educational psychologists' perceptions, knowledge and practices regarding speech, language and communication needs, *Educational Psychology in Practice*, in press.

Seligman, M. E., and Csikszentmihalyi, M. (2014). Positive psychology: An introduction. In: Csikszentmihalyi, M. (Ed). *Flow and the foundations of positive psychology* (pp. 279-298). Springer, Dordrecht.

Sigafoos, J. and Meikle, B. (1996). Functional communication training for the treatment of multiply determined challenging behavior in two boys with autism. *Behavior modification*, *20*(1), pp.60-84.

Skinner, B. F. (1963). Operant behavior. *American psychologist*, *18*(8), 503.

Sloper, P. (2004). Facilitators and barriers for co-ordinated multi-agency services. *Child: care, health and development*, *30*(6), pp.571-580.

Smith, M., Rogers, S., and Dawson, G. The Early Start Denver Model: a comprehensive early intervention approach for toddlers with autism. In: Handleman, J. and Harris, S. (Eds). *Pre-school Education Programs for Children with Autism (pp.65-101).* Austin, TX: Pro-Ed Corporation, Inc.

Squires, G. and Dunsmuir, S. (2011). Embedding Cognitive Behavioural Therapy training in practice: facilitators and barriers for trainee educational psychologists (TEPs). *Educational Psychology in Practice*, *27*(2), pp.117-132.

Sroufe, L. A. (1997). *Emotional development: The organization of emotional life in the early years*. Cambridge University Press.

Stewart, D. W., Rook, D. W and Shamdasani, P. N. (2006). *Focus groups: theory and practice.* Newbury Park, CA, Sage.

Stobie, I. (2002). Processes of 'Change' and 'Continuity' in Educational Psychology - Part 1. *Educational Psychology in Practice, 18*(3), pp.203-212.

Stone, W. L., Ousley, O. Y., Yoder, P. J., Hogan, K. L., and Hepburn, S. L. (1997). Nonverbal communication in two-and three-year-old children with autism. *Journal of autism and developmental disorders*, *27*(6), pp.677-696.

Suldo, S. M., Friedrich, A., and Michalowski, J. (2010). Personal and systems-level factors that limit and facilitate school psychologists' involvement in school-based mental health services. *Psychology in the Schools*, *47*(4), pp.354-373.

Teddlie, C. and Tashakkori, A. (2009). *Foundations of Mixed Methods Research*. Thousand Oaks, CA: Sage publications.

Tillman, J. G., Clemence, A. J., and Stevens, J. L. (2011). Mixed Methods Research Design for Pragmatic Psychoanalytic Studies. *Journal of the American Psychoanalytic Association*, *59*(5), pp.1023–1040.

Todd, Z., Nerlich, B., Clarke, D. D., and McKeown, S. (Eds.). (2004). *Mixing methods in psychology: The integration of qualitative and quantitative methods in theory and practice*. Hove: Psychology press.

Tronick, E. and Beeghly, M. (2011). Infants' meaning making and the development of mental health problems. *American Psychologist*, *66*(2), pp.107-119.

Tukey, J. W. (1967). What have statisticians been forgetting? In: Jones, L. V. (Ed). *The Collected Works of John W. Tukey: Philosophy and Principles of Data Analysis 1965-1986 (Vol. 4). pp.587-599.* California: CRC Press.

Tukey, J. W. (1977). Exploratory data analysis. Reading, MA: Addison Wesley.

Venter, A., Lord, C., and Schopler, E. (1992). A follow-up study of high-functioning autistic children. *Journal of child psychology and psychiatry*, *33*(3), pp.489-597.

Vygotsky, L. (1978). *Mind in Society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wacker, D., Berg, W., Harding, J., and Cooper-Brown, L. (2009) Matching Treatment to the Function of Destructive Behaviour. In: Reed, P. (Ed*). Behavioral Theories and Interventions for Autism.* UK: Nova Science Publishers.

Waite, V. and Woods, K. (1999). Educational Psychologists' Assessments of Autism, *Educational Psychology in Practice*, *15*(3), pp.167-173

Walworth, D. (2007). The Use of Music Therapy within the SCERTS Model for Children with Autism Spectrum Disorder. *Journal of Music Therapy, 44*(1), pp.2-22.

Walworth, D. Register, D., Engel, J. (2009). Using the SCERTS Model Assessment Tool to Identify Music Therapy Goals for Clients with Autism Spectrum Disorder. *Journal of Music Therapy, 46*(3), pp.204-216.

Waugh, I. (2018). *The prevalence of autism (including Asperger's Syndrome) in school age children in Northern Ireland 2018.* Department for Health: Northern Ireland.

Webster, D. (2001). The Appraisal of Educational Psychologists: A very private affair, *Educational Psychology in Practice*, *17(*2), pp.109-120.

Weeks, C., Hill, V., and Owen, C. (2017). Changing thoughts, changing practice: examining the delivery of a group CBT-based intervention in a school setting. *Educational Psychology in Practice*, *33*(1), pp.1-15.

Wetherby, A. M., Guthrie, W., Woods, J., Schatschneider, C., Holland, R. D., Morgan, L., and Lord, C. (2014). Parent-implemented social intervention for toddlers with autism: an RCT. *Pediatrics*, *134*(6), pp.1084-1093.

Wetherby, A.M. and Prizant, B.M. (Eds.) (2000). *Autism spectrum disorders: A developmental, transactional perspective*. Baltimore, MD: Paul Brookes Publishing Company.

Wetherby, A. M., Prizant, B. M., and Hutchinson, T. A. (1998). Communicative, social/affective, and symbolic profiles of young children with autism and pervasive developmental disorders. *American Journal of Speech-Language Pathology*, *7*(2), pp.79-91.

Wetherby, A. M., Prizant, B. M., and Schuler, A. L. (2000). Understanding the nature of communication and language impairments. *Autism spectrum disorders: A transactional developmental perspective*, *9*, pp.109-141.

Wetherby, A.M., Warren, S.F., and Reichle, J. (1998). *Transitions in Prelinguistic Communication.* In: Wetherby, A.M., Warren, S.F., and Reichle, J. (Eds). *Communication and Language Intervention Series: Volume 7.* Baltimore: Paul H. Brookes Publishing Co.

Wigelsworth, M., Humphrey, N., Kalambouka, A. and Lendrum, A. (2010). A review of key issues in the measurement of children's social and emotional skills, *Educational Psychology in Practice*, 26(2), pp.173-186.

Wilson, R. A. (2000). The mind beyond itself. In: Sperber, D. (Ed). *Metarepresentations: A multidisciplinary perspective*, *(pp.31-52).* New York: Oxford University Press.

Wilson, N. and McLean, S. (1994). *Questionnaire Design: A Practical Introduction.* County Antrim: University of Ulster Press.

Wing, L. (1997). The autistic spectrum. *The Lancet*, *350*(9093), pp.1761-1766.

Wing, L. and Gould, J. (1979). Severe impairments of social interaction and associated abnormalities in children: Epidemiology and classification. *Journal of Autism and Developmental Disorders, 9*(1), pp.11– 29.

Wolfendale, S., Bryans, T., Fox, M., Labram, A., and Sigston, A. (Eds.). (1992). *The Profession and Practice of Educational Psychology: Future Directions.* London: Cassell Educational Limited.

Wong, C., Odom, S. L., Hume, K. A., Cox, A. W., Fettig, A., Kucharczyk, S., ... and Schultz, T. R. (2015). Evidence-based practices for children, youth, and young adults with autism spectrum disorder: A comprehensive review. *Journal of autism and developmental disorders*, *45*(7), pp.1951-1966.

World Health Organization. (2016). *International statistical classification of diseases and related health problems* (10th Revision). Available at: https://icd.who.int/browse10/2016/en#/F84.0. [Accessed 15th April 2019].

World Health Organization. (2018). *International statistical classification of diseases and related health problems* (11th Revision). Available at: https://icd.who.int/browse11/l-m/en [Accessed 15th April 2019].

Yu, C. H., DiGangi, S., and Jannasch-Pennell, A. (2008). The role of abductive reasoning in cognitive-based assessment. *Elementary Education Online, 7*(2), pp.310-322.

Yu, L. and Zhu, X. (2018). Effectiveness of a SCERTS Model-Based Intervention for Children with Autism Spectrum Disorder (ASD) in Hong Kong: A Pilot Study. *Journal of Autism and Developmental Disorders*, *48*(11), pp.3794-3807.

Yu, C. H. (2006). *Philosophical foundations of quantitative research methodology.* Lanham, MD: Univ. Press of America.

APPENDICES

Appendix 2: ICD-11 subtypes of autism

ICD-11 Autism Spectrum Disorder (WHO, 2018) Subtypes of ASD:

- "6A02.0 *Autism spectrum disorder without disorder of intellectual development and with mild or no impairment of functional language*. All definitional requirements for autism spectrum disorder are met, intellectual functioning and adaptive behaviour are found to be at least within the average range (approximately greater than the 2.3rd percentile), and there is only mild or no impairment in the individual's capacity to use functional language (spoken or signed) for instrumental purposes, such as to express personal needs and desires.

- "6A02.1 *Autism spectrum disorder with disorder of intellectual development and with mild or no impairment of functional language.* All definitional requirements for both autism spectrum disorder and disorder of intellectual development are met and there is only mild or no impairment in the individual's capacity to use functional language (spoken or signed) for instrumental purposes, such as to express personal needs and desires.

- "6A02.2 *Autism spectrum disorder without disorder of intellectual development and with impaired functional language*. All definitional requirements for autism spectrum disorder are met, intellectual functioning and adaptive behaviour are found to be at least within the average range (approximately greater than the 2.3rd percentile), and there is marked impairment in functional language (spoken or signed) relative to the individual's age, with the individual not able to use more than single words or simple phrases for instrumental purposes, such as to express personal needs and desires.

- "6A02.3 *Autism spectrum disorder with disorder of intellectual development and with impaired functional language*. All definitional requirements for both autism spectrum disorder and disorder of intellectual development are met and there is marked impairment in functional language (spoken or signed) relative to the individual's age, with the individual not able to use more than single words or

simple phrases for instrumental purposes, such as to express personal needs and desires.

- "6A02.4 *Autism spectrum disorder without disorder of intellectual development and with absence of functional language*. All definitional requirements for autism spectrum disorder are met, intellectual functioning and adaptive behaviour are found to be at least within the average range (approximately greater than the 2.3rd percentile), and there is complete, or almost complete, absence of ability relative to the individual's age to use functional language (spoken or signed) for instrumental purposes, such as to express personal needs and desires.

- "6A02.5 *Autism spectrum disorder with disorder of intellectual development and with absence of functional language*. All definitional requirements for both autism spectrum disorder and disorder of intellectual development are met and there is complete, or almost complete, absence of ability relative to the individual's age to use functional language (spoken or signed) for instrumental purposes, such as to express personal needs and desires."

Appendix 3: DSM-5 diagnostic criteria for autism

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (2013)

DSM-V: Autism Spectrum Disorder: Diagnostic Criteria:

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity: Severity is based on social communication impairments and restricted repetitive patterns of behavior.

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).

2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).

3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g, strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).

4. Hyper- or hypo-reactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity: Severity is based on social communication impairments and restricted, repetitive patterns of behavior.

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:
- With or without accompanying intellectual impairment
- With or without accompanying language impairment
- Associated with a known medical or genetic condition or environmental factor
- Associated with another neurodevelopmental, mental, or behavioral disorder
- With catatonia

Appendix 4: Theories of autism

Biological, social, emotional, behavioural, and cognitive theories of autism are presented in this appendix. This outlines the concepts and ideas underpinning the development of the SCERTS model and its use in educational psychology practice with children with autism.

Biological Theories

Autism is now widely accepted as a genetic condition, though with both biology and environmental factors impacting the development of autism (Happé & Fletcher-Watson, 2019). Despite this, there are currently no biological markers or specific genetic causes of autism (Muhle et al., 2018). Research (Tick et al., 2016; Bailey et al., 1995; Folstein & Rutter, 1977) demonstrates that autism does run in families and that identical twins are much more likely to both hold a diagnosis of autism (if appropriate) than fraternal twins. Whilst this finding is significant, identical twins share 100% of their DNA, yet not all identical twins share a diagnosis (Bailey et al., 1995). This suggests there may be further influences which mediate autism.

It is important to understand the biological aspect of autism to remove any judgements regarding parenting and to understand the neurobiological associations with psychological outcomes. Key research regarding the neurobiology of autism establishes a correlation with reduced levels of the hormone oxytocin, and fewer oxytocin receptors (LoPoro & Waldman, 2015; Donaldson & Young, 2008; Jacob et al., 2007; Modahl et al., 1998). Additionally, research has shown improvements in social skills when children are given oxytocin supplements (Andari et al., 2010; Guastella et al., 2009; Hollander et al., 2007). However, these are short term

benefits only and evidence is currently not robust enough to implement oxytocin supplements as a medical intervention to support the needs of children with autism. Supplements might also be considered a controversial development to supporting needs associated with autism, as a medical response changes the biology of the child, putting autism more in line with a deficiency rather than a difference.

In typically developing children oxytocin is a key hormone for social and maternal bonding in early infancy (Galbally et al., 2011). Oxytocin activates a release of dopamine, a 'feel-good' hormone, thus leading to a biological reinforcement and preference for social interactions (Strathearn, 2011). Neurobiological research suggests that children with autism do not react to social interactions in the same way that typically developing children do, with some children with autism processing facial information similarly to inanimate objects, releasing lower levels of oxytocin (Sasson & Touchstone, 2014; Fujisawa et al., 2014; Chawarska & Shic, 2009; Dawson et al., 1990). If children with autism do not have an oxytocin and dopaminergic 'rush' when interacting socially, they may be less motivated to engage in social interactions and therefore less able to develop social skills through a lack of innate motivation and practice. This has important consequences for psychological interventions supporting the development of social skills in children with autism.

Social, Emotional, and Behavioural Theories

Despite having a biological basis, autism is currently diagnosed wholly on behaviour. As a result, autism is often seen as a behavioural condition.

Some individuals with autism have been labelled with presenting 'challenging behaviours' (Chiang, 2008; Holden & Gitlesen, 2006). These can be anti-social behaviour, such as not following instructions or interrupting, or destructive behaviour, such as self-injury, injury to others, or damage to the environment. As a result, reducing or eradicating these behaviours can sometimes be seen as the priority, often in environments such as schools where other children may be affected by the behaviour.

A behavioural theory of autism focuses on observable features. This theory does not look further into the components underlying the behaviour, therefore, support responds to the difficulties with a similarly behavioural approach, such as reinforcement or punishment (Skinner, 1963).

In 2014 the Code of Practice replaced the term 'behaviour' with 'social and emotional' needs. This change reflects a growing understanding that behaviour is a form of communication reflecting the underlying needs of the individual. As a result, the behaviour demonstrated by individuals with autism is considered under the following headings: behaviour as social communication, and, behaviour as emotional regulation.

Behaviour as Social Communication

Autism is characterised by a pervasive difficulty with social communication and interaction (ICD-11, 2018). Difficulties in expressive communication – verbal or non-verbal – may result in the individual seeking alternative methods of communicating wants and needs, for example, shouting, self-injuring, or becoming destructive (Barnes & McCabe, 2012; Durand, 1993). Difficulties with receptive communication

can result in a lack of understanding, causing confusion or distress as demonstrated through behaviour which may be seen as challenging. These methods of communicating may not always be accepted socially, however, can be effective in meeting the child's needs. For example, for children with autism these behaviours may: get them something they desire, such as time alone or help with something; allow them to avoid something, such as social events or a difficult task; or communicate an emotion, such as upset with a change to routine (Prizant et al., 2006; Durand, 1993).

Children with autism are delayed in their early years in developing an understanding of purposeful and intentional social communication (Wetherby, Prizant & Schuler, 2000). However, non-verbal communication is evident in children of all ages, including children with autism, for example, crying when hungry or reaching towards something the child wants (Bates, 1979). This communication may not be the most effective approach to getting their needs met as they may not be understood by the recipient. However, with the development of more advanced communication techniques, needs can be met more effectively – for example, saying "*I'm hungry*" (Carpenter & Tomasello, 2000; Sigafoos & Miekle, 1996). Children with autism have been shown to be delayed in developing these skills, reverting to less effective means of communication (e.g. non-verbal/behavioural) for longer periods of childhood (Lord & Pickles, 1996; Stone et al., 1997; Wetherby, Prizant & Hutchinson, 1998). Some children use imitation or delayed echolalia to intentionally communicate a want or need previously experienced (Wetherby, Warren & Reichle, 1998), however, this may not always be clear to the recipient.

It is recognised that increased positive outcomes for children with autism are highly correlated with the development of effective communication skills (National Research Council, 2001; Mawhood, Howlin & Rutter, 2000; Koegel et al., 1999; Venter, Lord & Schopler, 1992). Therefore, development of social communication skills needs to be a priority in any programme supporting the needs relating to autism.

Behaviour as Emotional Regulation

Emotional regulation is fundamental in developing social, emotional, and communication skills for all children (Koole, 2009; Prizant & Meyer, 1993). A child's emotional regulation skills directly impact attention, problem solving, and communication skills (Tronick & Beeghly, 2011; Cicchetti, Ackerman, & Izard, 1995).

Emotional regulation is considered to consist of five elements (DeGangi, 2017; Scherer, 1984) as detailed in figure A1. However, all of these may differ in children with autism. For example, how sensory information is processed (B) has been shown to be different in individuals with autism (Marco et al., 2011; Moore, 2015; Kientz & Dunn, 1997) and social communication can also be difficult, impacting on the ability to seek (C) and accept (D) emotional regulatory support from others. Additionally, emotional and physiological arousal state (B) can alter one's perceptions (A), resulting in further impacts (see figure A2), including a low threshold for emotional triggers, causing higher levels of anxiety and a reduced ability to recognise or respond effectively at an early stage (D and E) (Attwood, 1998). Further, cognitive appraisal (A) depends heavily on a level of metacognition,

which develops with language (Vygotsky, 1978). Children with autism who may be non-verbal or have limited language skills will find it more difficult to self-mediate and reflect due to limited internal dialogues.

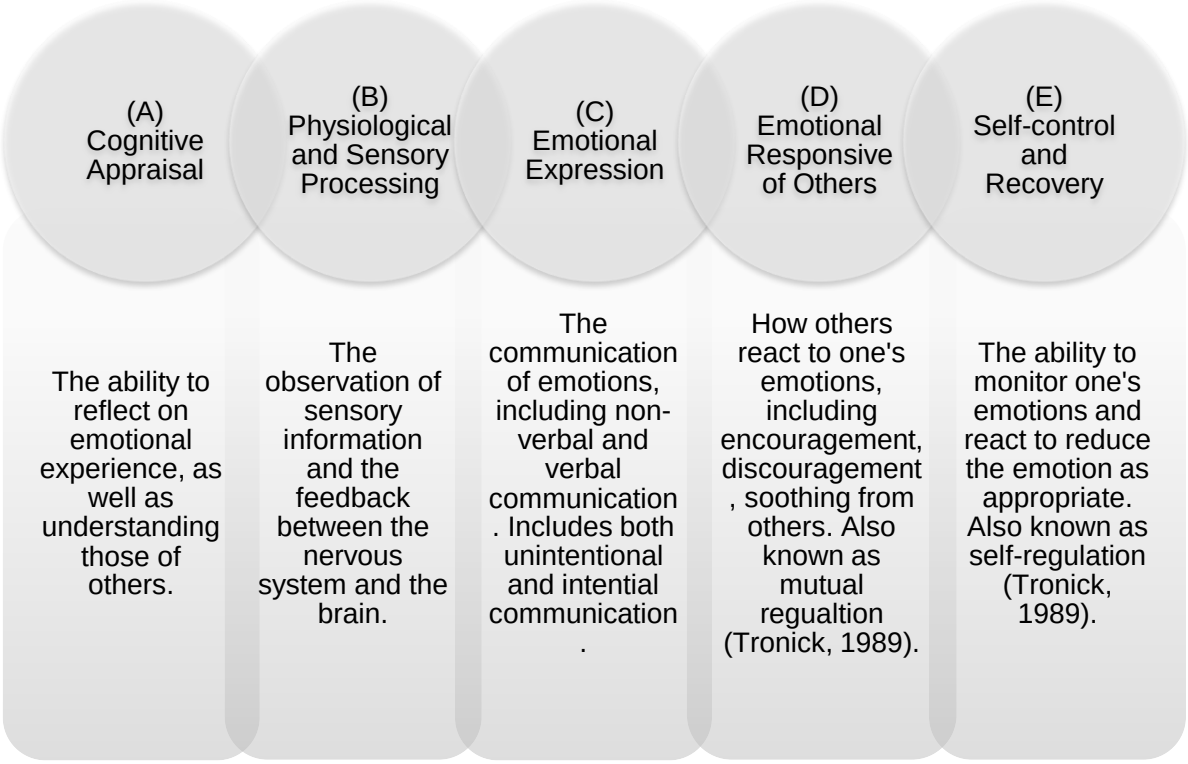


Figure A1. Five elements of emotional regulation – a combination of factors from DeGangi (2017) and Scherer (1984)

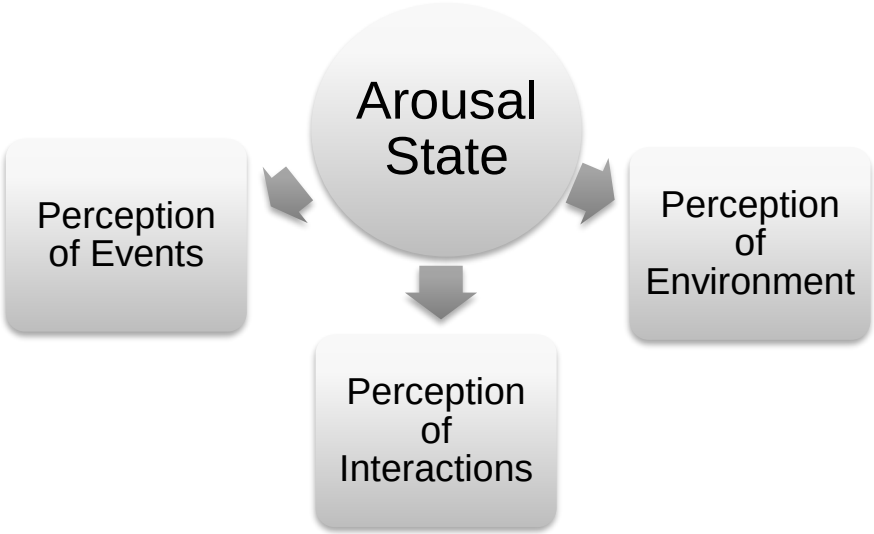


Figure A2. Influence of arousal state on perceptions

All children exhibit an innate fight or flight response when in a high arousal state (Cannon, 1932). Neurophysiological differences in children with autism are thought to impact on arousal state, resulting in hyper- or hypo- arousal or a combination across time and environment (Anzalone & Williamson, 2000). This suggests that children with autism are more likely to have a lower threshold for difficult emotions resulting in increased frequency of the fight or flight response, sometimes seen as challenging behaviour.

Behavioural, language, and metacognitive strategies can all support emotional regulation (Kross et al., 2014; Gyurak, Gross & Etkin, 2011; Davis et al., 2010; Koole, 2009). For children with autism, language and metacognitive strategies of emotional regulation can be difficult, as can seeking mutual regulation through use of appropriate social skills (as inherent to the diagnosis), resulting in a reliance on behavioural strategies to self-regulate.

Ros Blackburn, a nationwide speaker sharing her own experience of autism, gives great insight in to *"why I do what I do":*

> *"I am unable to 'read into' people's behaviour or read the intentions behind it and am therefore not able to predict their actions. It comes across as very threatening and frightening most of the time. I have therefore developed various coping strategies"* - Blackburn (2010).

She goes on to explain behaviours such as flicking her fingers in front of her eyes and biting her hand. These serve a highly functional purpose in self-regulating her emotional state by reducing her arousal levels and creating distractions. For more

examples of behaviour as an emotional regulation strategy see Prizant & Fields-Meyer (2015).

Cognitive Theories

Cognitive theories of autism attempt to link the unspecified biology and the observed behaviour of individuals with autism. There are two key cognitive theories presented here. These are differences in: theory of mind and information processing.

Theory of Mind

Difficulties with understanding social communication and interaction is sometimes described as a difficulty with 'Theory of Mind' (ToM) (Baron-Cohen, Frith & Leslie, 1985) or meta-representation (Wilson, 2000). This is the ability to understand the differing mental states between oneself and others (Premack & Woodruff, 1978). Research suggests that children with autism are more likely to find it difficult to think from the perspective of someone else, compared to children without autism (Baron-Cohen et al., 1985). This links with Wing & Gould's (1979) observations of difficulties with pretend play in children with autism. For example, children may find it difficult to understand the purpose of narration during play, as sharing of thoughts is linked with ToM. Further research shows that behavioural aspects of autism, such as reduced use of gesture, links closely with scenarios involving ToM, such as protodeclarative gestures of embarrassment or pointing to share attention, (Attwood, Frith & Hermelin, 1988; Baron-Cohen, 1989). This finding was not replicated for protoimperative gestures which do not involve ToM, such as reaching to get something.

Baron-Cohen, Allen & Gillberg (1992) suggested that autism develops from a fundamental difficulty with shared attention. That is, consciously attending to the same thing as another person. This has been shown to be linked with ToM, along with other social skills, such as imitation and recognising emotions (Baron-Cohen, 2000). These skills allow for emotional and social connection with others (Meltzoff, 1990) and a difficulty in utilising these skills will therefore impact on social and emotional skills, as found in individuals with autism.

In addition, the cognitive theory of autism attempts to explain difficulties in understanding emotions. Recognising an emotion does not require ToM, however, understanding the emotion does. For example, recognising that someone is angry in contrast to understanding *why* someone might be angry. Cognitive theories also explain difficulties with sarcasm and literal interpretation. If an individual has difficulties with ToM, they may come to rely on observable evidence thus accepting what is being said over what is being portrayed (Randall et al., 2006; Happé 1994).

However, the difficulty with the ToM notion is that some people with autism do demonstrate the ability to understand the perspective of other (Baron-Cohen, Leslie & Frith, 1986). It is possible that the theory stands and some people with autism learn this skill through alternative routes, such as overt teaching (Frith, Morton & Leslie, 1991). There are some accounts of conscious learning from people with autism corroborating this hypothesis (Hadwin et al., 1996), however, research suggests this is a skill that is difficult to maintain and generalise for people with autism (Fletcher-Watson et al. 2014). Alternatively, Happé & Fletcher-Watson (2019) suggest the development of ToM may simply be delayed in people with autism, impacting throughout life as a result of a difference in early childhood

learning opportunities. In support of this, no research has yet found pre-school children with autism to be able to pass ToM tests, whilst most typically developing children develop this between the ages of 15 months (Scott & Baillargeon, 2017) and 4 years (Gopnik & Astington, 1988).

Information Processing

The non-social elements of autism, such as attention to detail, can be explained by theories relating to differences in information processing. The Weak Central Coherence Theory (Frith, 2003; Frith & Happé, 1994) suggests that individuals with autism process elements of information individually, rather than processing information as a whole. This may cause difficulties in seeing the bigger picture, or in generalising, however, can be highly beneficial in many situations and careers, such as accounting and the medical professions (Happé & Frith, 2006).

Further evidence towards a difference in information processing comes from research regarding the senses. It is well-documented that individuals with autism demonstrate differences in external sensory processing, such as touch, smell, and hearing (Marco et al., 2011; Moore, 2015; Kientz & Dunn, 1997). More recent research also suggests differences in internal sensory processing – 'interoception' (DuBois et al., 2016). For example, growing research demonstrates that some individuals with autism experience hunger and pain differently to people without autism (Moore, 2015). This may link with a difficulty in understanding and interpreting a variety of bodily sensations, making emotions and social situations difficult to understand as well as internal bodily processes (Murphy, Catmur & Bird, 2018).

The Fractionated Triad

It is clear from this review of literature that each theory of autism has merits, yet each theory is flawed as no single theory can account for all aspects of autism. The 'fractionated triad', as presented by Brunsdon & Happé (2014) presents a refreshed view of the needs associated with autism. This triad suggests that different aspects of autism may have different underlying reasons for their existence in any one individual. This gives particular respect to the biological element of autism, whilst also valuing aspects of social, emotional, behavioural, sensory, and cognitive theories of autism.

Other Theories of Autism

In addition to those presented here, other theories of autism have been suggested by various authors and researchers, for example, the 'extreme maleness' theory (Baron-Cohen, 2002) and the theory of executive functioning (Hill, 2004; Ozenoff, Pennington & Rogers, 1991). However, the theories presented in this appendix were chosen as they have direct relevance to the SCERTS model and educational psychology practice.

Appendix 5: Research underpinning SCERTS (taken from Prizant et al., 2007)

® The SCERTS Model and Evidence-Based Practice

Table 2. Level of Evidence and SCERTS Domains and Components for each Reference

References	Level of Research Evidence	SCERTS Domain	SCERTS Component
Aldred, C., Green, J., & Adams, C. (2004). A new social communication intervention for children with autism: Pilot randomized controlled treatment study suggesting effectiveness. *Journal of Child Psychology & Psychiatry, 45,* 1420–1430.	Level I	SC TS	JA IS LS
Barnhill, G., Cook, K., Tebbenkamp, K., & Myles, B.S. (2002). The effectiveness of social skills intervention targeting nonverbal communication for adolescents with Asperger syndrome and related pervasive developmental delays. *Focus on Autism and Other Developmental Disabilities, 17*, 2, 112-118	Level III	SC TS	JA SU IS LS
Barry, T., Klinger, L., Lee, J., Palardy, N., Gilmore, T., & Bodin, S. (2003). Examining the effectiveness of an outpatient clinic-based social skills group for high-functioning children with autism. *Journal of Autism and Developmental Disorders*, 33, 6, 685-701.	Level III	SC TS	JA SU IS LS
Bauminger, N. (2002). The facilitation of social-emotional understanding and social interaction in high-functioning children with autism: Intervention outcomes. *Journal of Autism and Developmental Disorders*, *32*, 283-298.	Level III	SC ER TS	JA SU MR SR IS LS
Bauminger, N. (2004). The expression of and understanding of jealousy in children with autism. *Developmental Psychopathology, 16,* 157-177.	Level IV Core deficits	ER	MR SR
Begeer, S. (2006). Attention to facial emotion expressions in children with autism. *Autism, 10*, 37-51.	Level IV Core deficits	ER TS	MR SR IS LS
Bieberich, A. & Morgan, S. (2004). Self-regulation and affective expression during play in children with autism or Down Syndrome: A short- term longitudinal study. *Journal of Autism and Developmental Disorders, 34,* 439-448.	Level IV Predictive relations	ER	MR SR
Bodfish, J., Symons, F.J., Parker, D. E., & Lewis, M.H., (2000). Varieties of repetitive behavior in autism: Comparisons to mental retardation. *Journal of Autism and Developmental Disorders, 30*, 237-243.	Level IV Core deficits	ER	SR
Bono, M., Daley, T. & Sigman, M. (2004). Relations among joint attention, amount of intervention and language gain in autism. *Journal of Autism and Developmental Disorders, 34,* 495-505.	Level IV Predictive relations	SC	JA

Braithwaite, K. & Richdale, A. (2000). Functional communication training to replace challenging behaviors across two behavioral outcomes. *Behavioral Interventions, 15*, p21-36.	Level III	ER TS	MR IS
Bryan, L.C., Gast, D.L. (2000). Teaching on-task and on-schedule behaviors to higher functioning children with autism via picture activity schedules. *Journal of Autism and Developmental Disorders, 30,* 553-567.	Level III	ER TS	SR IS LS
Capps, L., Yirmiya, N., & Sigman, M.D. (1992). Understanding of simple and complex emotions in non-retarded children with autism. *Journal of Child Psychology and Psychiatry, 33*, 1169-1182.	Level IV Core deficits	ER	MR SR
Carr, C.G. & Durand, V.M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18*, 111-126.	Level III	SC ER	JA SU MR
Charlop, M., & Walsh, M. (1986). Increasing autistic children's daily spontaneous speech. *Journal of Applied Behavior Analysis, 19*, 307-314.	Level III	SC TS	JA SU IS
Charman, T., Swettenham, J., Baron-Cohen, S., Cox, A., Baird, G., & Drew, A. (1997). Infants with autism: An investigation of empathy, pretend play, joint attention, and imitation. *Developmental Psychology, 33*, 781-789.	Level IV Core deficits	SC	JA SU
Charman, T., Taylor, E., Drew, A., Cockerill, H., Brown, J., & Baird, G. (2005). Outcome at 7 years of children diagnosed with autism at age 2; predictive validity of assessments conducted at 2 and 3 years of age and pattern of symptom change over time. *Journal of Child Psychology and Psychiatry, 46*, 500-513.	Level IV Predictive relations	SC	JA
Dawson, G., Hill, D., Spencer, A., Galper, L.,& Watson, L. (1990). Affective exchanges between young autistic children and their mothers. *Journal of Abnormal Child Psychology, 18*, 335-345.	Level IV Core deficits	SC ER	JA MR
Dawson, G., Toth, K., Abbott, R., Osterling, J., Munson, J., Estes, A. & Liaw, J. (2004). Early social attention impairments in autism: Social orienting, joint attention, and attention to distress. *Developmental Psychology, 40*, 271-283.	Level IV Core deficits & Predictive relations	SC ER	JA SU MR SR
Downs, A. & Smith, T. (2004). Emotional understanding, cooperation, and social behavior in high-functioning children with autism. *Journal of Autism and Developmental Disorders, 34,* 625-635.	Level IV Core deficits	ER	MR SR
Drew, A., Baird, G., Baron-Cohen, S., Cox, A., Slonims, V., Wheelwright, S., Swettenham, J., Berry, B., & Charman, T. (2002). A pilot randomized control trial of a parent training intervention for pre-school children with autism: Preliminary findings and methodological challenges. *European Child and Adolescent Psychiatry, 11*, 266-272.	Level I	SC TS	JA SU IS

Durand, V.M., & Carr, E.G. (1987). Social influences on "self-stimulatory" behavior: Analysis and treatment application. *Journal of Applied Behavior Analysis, 20*, 119-132.	Level III	ER TS	MR SR IS LS
Escalona, A., Field, T., Singer, Strunck, R., Cullen, C., & Hartshorn, K. (2001). Brief report: Improvements in the behavior of children with autism following massage therapy. *Journal of Autism and Developmental Disorders, 31*, 513-516.	Level I	ER TS	MR SR IS LS
Frea, W.D., Arnold, C. & Vittimberger, G.L. (2001). A demonstration of the effects of augmentative communication on the extreme aggressive behavior of a child with autism within an integrated preschool setting. *Journal of Positive Behavior Interventions, 3,* 194-198.	Level III	ER TS	MR SR IS LS
Gillott, A., Furniss, F., & Walter, A. (2001). Anxiety in high-functioning children with autism. *Autism, 5*, 277-286.	Level IV Core deficits	ER	MR SR
Gritti, A., Bove, D., Di Sarno, A.M., D'Addio, A.A., Chiapparo, S., & Bove R.M. (2003). Stereotyped movements in a group of autistic children. F*unctional Neurology, 18*(2), 89-94.	Level IV Core deficits	ER	MR SR
Hsiao, Y. & Bernard-Opitz, V. (2000). Teaching conversational skills to children with autism: Effect on the development of a theory of mind. *Journal of Autism and Developmental Disorders, 30*, 6, 569-583.	Level III	SC TS	JA SU IS LS
Kaiser, A., Hancock, T., & Nietfeld, J. (2000). The effects of parent-implemented enhanced milieu teaching on the social communication of children who have autism. *Early Education and Development, 11*, 423-446.	Level III	SC TS	SU IS
Kashinath, S., Woods, J., & Goldstein, H. (2006). Enhancing generalized teaching strategy use in daily routines by caregivers of children with autism. *Journal of Speech, Language, and Hearing Research*, *49,* 466-485.	Level III	SC TS	JA SU IS
Kientz, M.A. & Dunn, W. (1997). A comparison of the performance of children with and without autism on the Sensory Profile. *American Journal of Occupational Therapy, 51*, 530-537.	Level IV Core deficits	ER TS	SR IS
Klin, A., Jones, W., Schultz, R., Volkmar, F. R., & Cohen, D. J. (2002). Visual fixation patterns during viewing of naturalistic social situations as predictors of social competence in individuals with autism. *Archives of General Psychiatry, 59,* 809–816.	Level IV Core deficits	SC	JA

Koegel, R. L., Bimbela, A., & Schreibman, L. (1996). Collateral effects of parent training on family interactions. *Journal of Autism and Developmental Disorders, 26*, 347–359.	Level I	TS	IS
Laski, K., Charlop, M., & Schreibman, L. (1988). Training parents to use the natural language paradigm to increase their autistic children's speech. *Journal of Applied Behavior Analysis, 21*, 391-400.	Level III	SC TS	SU IS
MacDuff, G.S., Krantz, P.J., & McClanahan (1993). Teaching children with autism to use photographic activity schedules: Maintenance and generalization of complex response chains. *Journal of Applied Behavior Analysis, 26*, 89-97.	Level III	ER TS	SR IS LS
Mahoney, G., & Perales, F. (2005). Relationship-focused early intervention with children with pervasive developmental disorders and other disabilities: A comparative study. *Developmental and Behavioral Pediatrics, 26*, 77-85.	Level II	SC ER TS	SU SR MR IS
McConachie, H., Randle, V., Hammal, D., & Le Couteur, A. (2005). A controlled trial of a training course for parents of children with suspected autism spectrum disorders. *Journal of Pediatrics, 147*, 335-340.	Level I	SC TS	JA IS
McGee, G., Morrier, M., & Daly, T. (1999). An incidental teaching approach to early intervention for toddlers with autism. *Journal of the Association for Persons with Severe Handicaps, 24*, 133–146.	Level II	SC TS	SU IS LS
Mundy, P., Sigman, M., & Kasari, C. (1990). A longitudinal study of joint attention and language development in autistic children. *Journal of Autism and Developmental Disorders, 20*, 115-128.	Level IV Predictive relations	SC TS	JA SU IS
O'Reilly, M. (2005). An examination of the effects of a classroom activity schedule on levels of self-injury and engagement for a child with severe autism. *Journal of* Autism & *Developmental Disorders, 35*, 305-11.	Level III	ER TS	SR IS LS
Ozonoff, S. & Miller, J. (1995). Teaching theory of mind: A new approach to social skills training for individuals with autism. *Journal of Autism and Developmental Disorders, 25*, 4, 415-433.	Level II	SC TS	JA IS LS
Pierce, K. & Schreibman, L. (1994). Teaching daily living skills to children with autism in unsupervised settings through pictorial self-management. *Journal of Applied Behavior Analysis, 27*, 471-482.	Level III	ER TS	SR LS
Reese, R., Richman, D., Belmont, J., & Morse, P. (2005). Functional characteristics of disruptive behavior in developmentally disabled children with and without autism. *Journal of* Autism *and Developmental Disorders, 35*, 419-428.	Level IV Core deficits	SC ER TS	JA MR SR IS LS

Scattone, D.; Wilczynski, S.M; Edwards, R.P., & Rabian, B. (2002) Decreasing disruptive behaviors of children with autism using social stories. *Journal of Autism and Developmental Disorders, 32*, 535-543.	Level III	ER TS	MR SR IS LS
Sigman, M., & Ruskin, E. (1999). Continuity and change in the social competence of children with autism, Down syndrome, and developmental delays. *Monographs of the Society for Research in Child Development,* 64.	Level IV Predictive relations	SC TS	JA SU IS
Sigman, M., Dijamco, A., Gratier, M., & Rozga, A. (2004). Early detection of core deficits in autism. *Mental Retardation and Developmental Disabilities Research Reviews, 10*, 221-233.	Level IV Core deficits	SC ER	JA SU MR
Siller, M. & Sigman, M. (2002). The behaviors of parents of children with autism predict the subsequent development of their children's communication. *Journal of Autism and Developmental Disorders, 32*, 77-89.	Level IV Predictive relations	SC TS	JA SU IS
Solomon, M., Goodlin-Jones, B., & Anders, T.F. (2004). A social adjustment enhancement intervention for high functioning autism, Asperger's Syndrome, and pervasive developmental disorder NOS. *Journal of Autism and Development Disorders, 34*, 649-668.	Level II	ER TS	MR SR IS
South, M., Ozonoff, S., & McMahon, W.M. (2005). Repetitive behavior profiles in Asperger Syndrome and high-functioning autism. *Journal of Autism and Developmental Disorders, 35*, 145-158.	Level IV Core deficits	ER	SR
Stone, W., Ousley, O., Yoder, P., Hogan, K. & Hepburn, S. (1997). Nonverbal communication in 2- and 3-year old children with autism. *Journal of Autism and Developmental Disorders, 27*, 677-696.	Level IV Core deficits	SC	JA SU
Stone, W. & Yoder, P. (2001). Predicting spoken language level in children with autism spectrum disorders. Autism, 5(4), 341-361.	Level IV Predictive relations	SC TS	SU IS
Swettenham, J., Baron-Cohen, S., Charman, T., Cox, A., Baird, G., Drew, A., et al. (1998). The frequency and distribution of spontaneous attention shifts between social and nonsocial stimuli in autistic, typically developing, and nonautistic developmentally delayed infants. *Journal of Child Psychology and Psychiatry, 39*, 747-753.	Level IV Core deficits	SC	JA
Wantanabe, M., & Sturmey, P. (2003). The effect of choice making opportunities during activity schedules on task engagement of adults with autism. *Journal of Autism and Developmental Disorders, 33*, 535-538.	Level III	ER TS	MR SR IS LS

Wetherby, A. M., Prizant, B. M., & Hutchinson, T. (1998). Communicative, social-affective, and symbolic profiles of young children with autism and pervasive developmental disorder. *American Journal of Speech-Language Pathology, 7*, 79-91.	Level IV Core deficits	SC	JA SU
Wetherby, A., Watt, N., Morgan, L., & Shumway, S. (in press). Social communication profiles of children with autism spectrum disorders late in the second year of life. *Journal of Autism and Developmental Disorders*.	Level IV Core deficits & Predictive relations	SC	JA SU
Wetherby, A. & Woods, J. (in press). Effectiveness of early intervention for children with autism spectrum disorders beginning in the second year of life. T*opics in Early Childhood Special Education*.	Level II	SC TS	JA SU IS LS
Wetherby, A., Woods, J., Allen, L., Cleary, J., Dickinson, H., & Lord, C. (2004). Early indicators of autism spectrum disorders in the second year of life. *Journal of Autism and Developmental Disorders, 34*, 473-493.	Level IV Core deficits	SC ER	JA SU SR MR
Whalen, C., & Schreibman, L. (2003). Joint attention training for children with autism using behavior modification procedures. *Journal of Child Psychology and Psychiatry, 44*, 456–468.	Level III	SC TS	JA SU IS LS
Yirmiya, N., Sigman, M.D., Kasari, C., & Mundy, P. (1992). Empathy and cognition in high-functioning children with autism. *Child Development, 63*, 150-160.	Level IV Core deficits	SC ER	JA MR

Appendix 6: Questionnaire used in data collection

1. What is your current professional status?

- Principal or Senior Educational Psychologist
- Educational Psychologist
- Trainee or Assistant Educational Psychologist
- Other

2. What training have you received in relation to the SCERTS approach?

- Formal two day training course (led by Emily Rubin)
- Formal one day training course
- Informal training through colleagues
- Informal reading - self taught
- None
- Other:

3. When did you begin your training in SCERTS (formal/informal/self-taught)?

- Within the last 6 months
- 6 months - 1 year ago
- Over a year ago
- Not applicable

4. Since learning about the SCERTS approach, how have you used this in practice? Please tick as many as relevant.

- SCERTS Assessment Process (full comprehensive assessment)
- SCERTS in Action (adapted/shortened assessment)
- Observation tools
- Information gathering questionnaires
- Using the theoretical underpinnings to guide formulation
- Using some SCERTS principles informally in practice
- Referring to SCERTS principles in consultation
- In training others
- As a recommended action
- Have not used or drawn on any SCERTS principles or tools
- Other:

5. Thinking about the different ways of using SCERTS, on average how often do you draw on SCERTS in your practice?

- At least once a week
- Every couple of weeks
- At least once a month
- Every couple of months
- Approximately once every 6 months
- Approximately once a year
- Less than once a year
- I don't use/draw on the SCERTS approach in my practice

6. What age children have you drawn on/used the SCERTS approach with? Check as many as appropriate.

- 0-2 years old
- 3-5 years old
- 6-8 years old
- 9-11 years old
- 12-14 years old
- 15-17 years old
- 18+
- None

7. Thinking about the children you have drawn on/used the SCERTS approach with, approximately how many have been each partner stage?

	0 children	1-3 children	4-10 children	Over 10 children
Social Partner				
Language Partner				
Conversational Partner				

8. Which other professionals have you collaborated with using or drawing on elements of the SCERTS approach?

- Speech and Language Therapist(s)
- Occupational Therapist(s)
- Specialist Teacher(s)
- Early Years Professional(s)
- School-based Teacher(s)
- Other Educational Psychologist(s)
- None
- Other:

9. What diagnoses/difficulties did the child(ren) have when you drew on/used the SCERTS approach?

- Autism
- Social Communication Difficulties
- Semantic Pragmatic Disorder
- Speech and Language Difficulties
- Attachment Needs
- Learning Disability
- None
- Other:

10. What type(s) of work have you used/drawn on the SCERTS approach with?

- Statutory work as part of an EHC assessment
- Traded work
- Tribunal case
- Potential tribunal case
- None
- Other:

11. Thinking about the outcome of your assessment(s) which incorporated/drew on the SCERTS approach, on average how comprehensive was your understanding of the child's needs compared to other methods of assessment typically used?

- More comprehensive understanding than other methods typically used
- Similar understanding to other methods used
- Less comprehensive understanding than other methods typically used
- Unsure
- Other:

12a. Thinking about when you have drawn on/used the SCERTS approach, on average how confident did you feel in your choice of intervention/support following the assessment, compared to other assessment tools typically drawn on?

- More confident
- Less confident
- About the same
- Unsure
- Other:

12b. Please briefly explain why you felt more/less confident, if applicable.

_____

13. Having now used/drawn on the SCERTS approach in some way, how confident do you feel going forward regarding the use of SCERTS?

- Confident
- Somewhat confident
- Somewhat apprehensive
- Apprehensive
- Not applicable
- Other:

14a. How many cases have you reviewed where the SCERTS model was previously used, either formally or informally?

- None
- 1-3
- 4-10
- More than 10

(14b. Thinking about the cases using SCERTS that you reviewed, on average, how regular was/were the review(s)?

- Weekly
- Monthly
- Half-termly
- Termly
- Annually
- Not applicable
- Other:)

15. How would you like to use the SCERTS approach in the future? Tick as many as appropriate. Boxes can be left blank if you are unsure.

	Statutory assessment	If Tribunal work arose	Traded casework	Other types of practice	I would not like to use SCERTS
Full SCERTS Assessment					
SCERTS in Action					
Observational Tools					
Other elements of SCERTS					

16. What stops you from using/drawing on the SCERTS approach more often? Please choose up to three factors.

- Time constraints
- Difficulties in working with other professionals
- The approach is not suitable for the children I work with
- Limited understanding of the approach
- Colleague/managerial support in utilising the approach
- Confidence
- Other:

17. What would support you to use/draw on the SCERTS approach more often in your practice? Please choose the two most helpful options.

- More ideas on how to use SCERTS in limited time scales
- More ideas on how to use SCERTS in alternative ways
- More supervisory support
- More peer support
- Further training on the full SCERTS assessment
- Further training on SCERTS in action
- Further training on the theories underpinning SCERTS
- Other:

Appendix 7: Initial brainstorm of focus group questions

Key question to be answered: What effect has the SCERTS model had on your practice as an educational psychologist?

Initial thoughts

After completing the SCERTS training, what excited you most about the approach?

What were you most concerned/apprehensive about?

If you have used the SCERTS approach since training, have these thoughts changed? If so, how, and what may have impacted on this?

Multidisciplinary working

Has SCERTS changed the way you work with colleagues, from any background (i.e. other educational psychologist, or from different disciplines), and if so, in what way?

Has the SCERTS training had any indirect influences on multidisciplinary working? For instance, has the way you work with colleagues from different disciplines changed since training in SCERTS when you are *not* directly using SCERTS?

What impact has the SCERTS approach had on your working relationship with families?

Confidence

Has training in SCERTS impacted your confidence in assessment or intervention? Why do you think this might be? What influences this?

Has training in SCERTS impacted your confidence in a certain type of work, for instance, traded, statutory, or tribunal work?

Use

Tell me about the reasons you choose to use, or not to use, SCERTS in your work.

Tell me more about how you use SCERTS in your practice.

Has training in SCERTS changed the way you work? If so, in what way?

Thinking about SCERTS and other assessment methods, what do you feel the advantages/benefits of using SCERTS over another method may be?

Thinking about SCERTS and other assessment methods, what do you feel the disadvantages/limitations of using SCERTS over another method may be?

Are there times when SCERTS may be appropriate in your work but you choose not to use it? Tell me more about the reasons for this.

The SCERTS model aims to provide a comprehensive understanding of the child. Tell me about your experience of this in practice.

If you have you drawn on SCERTS in relation to a potential or actual tribunal, how do you think the use of this model aided or restricted: the assessment, the relationship with the family, and the tribunal itself?

Other impacts

What are your reflections on the whole-team training approach (as experienced by this service), rather than training one or two SCERTS specialists?

Thinking more broadly, do you think there have been any other impacts of training in SCERTS on your practice, either as an individual practitioner or as a team of educational psychologists?

Appendix 8: Application for Ethical Review

Updated 25/02/15

UNIVERSITY OF BIRMINGHAM
APPLICATION FOR ETHICAL REVIEW

Who should use this form:

This form is to be completed by PIs or supervisors (for PGR student research) who have completed the University of Birmingham's Ethical Review of Research Self Assessment Form (SAF) and have decided that further ethical review and approval is required before the commencement of a given Research Project.

Please be aware that all new research projects undertaken by postgraduate research (PGR) students first registered as from 1st September 2008 will be subject to the University's Ethical Review Process. PGR students first registered before 1st September 2008 should refer to their Department/School/College for further advice.

Researchers in the following categories are to use this form:

1. The project is to be conducted by:
    - staff of the University of Birmingham; or
    - postgraduate research (PGR) students enrolled at the University of Birmingham (to be completed by the student's supervisor);
2. The project is to be conducted at the University of Birmingham by visiting researchers.

Students undertaking undergraduate projects and taught postgraduate (PGT) students should refer to their Department/School for advice.

NOTES:

- An electronic version of the completed form should be submitted to the Research Ethics Officer, at the following email address: aer-ethics@contacts.bham.ac.uk. Please do not submit paper copies.
- If, in any section, you find that you have insufficient space, or you wish to supply additional material not specifically requested by the form, please it in a separate file, clearly marked and attached to the submission email.
- If you have any queries about the form, please address them to the Research Ethics Team.

☒ **Before submitting, please tick this box to confirm that you have consulted and understood the following information and guidance and that you have taken it into account when completing your application:**

- **The information and guidance provided on the University's ethics webpages (https://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Ethical-Review-of-Research.aspx)**
- **The University's Code of Practice for Research (http://www.as.bham.ac.uk/legislation/docs/COP_Research.pdf)**

UNIVERSITY OF BIRMINGHAM APPLICATION FOR ETHICAL REVIEW	*OFFICE USE ONLY:* Application No: Date Received:

1. TITLE OF PROJECT

SCERTS: An Exploration of Educational Psychology Practice.

2. THIS PROJECT IS:

University of Birmingham Staff Research project ☐
University of Birmingham Postgraduate Research (PGR) Student project ☒
Other ☐ (Please specify):

3. INVESTIGATORS

a) PLEASE GIVE DETAILS OF THE PRINCIPAL INVESTIGATORS OR SUPERVISORS (FOR PGR STUDENT PROJECTS)

Name: Title / first name / family name	Dr Julia Howe
Highest qualification & position held:	EdPsychD / Academic and professional tutor
School/Department	School of Education (Disability, Inclusion and Special Needs Department)
Telephone:	0121 414 4883
Email address:	j.howe.1@bham.ac.uk

Name: Title / first name / family name	
Highest qualification & position held:	
School/Department	
Telephone:	
Email address:	

b) PLEASE GIVE DETAILS OF ANY CO-INVESTIGATORS OR CO-SUPERVISORS (FOR PGR STUDENT PROJECTS)

Name: Title / first name / family name	
Highest qualification & position held:	
School/Department	
Telephone:	
Email address:	

c) In the case of PGR student projects, please give details of the student

Name of student:	Roseanna Knight	Student No:	1732124
Course of study:	Applied Educational and Child Psychology Doctorate	Email address:	RXK625@student.bham.ac.uk
Principal	Dr Julia Howe		

4. ESTIMATED START OF PROJECT Date: March 2018

ESTIMATED END OF PROJECT Date: June 2019

5. FUNDING

List the funding sources (including internal sources) and give the status of each source.

Funding Body	*Approved/Pending /To be submitted*
N/A	

If you are requesting a quick turnaround on your application, please explain the reasons below (including funding-related deadlines). You should be aware that whilst effort will be made in cases of genuine urgency, it will not always be possible for the Ethics Committees to meet such requests.

N/A

6. SUMMARY OF PROJECT

Describe the purpose, background rationale for the proposed project, as well as the hypotheses/research questions to be examined and expected outcomes. This description should be in everyday language that is free from jargon. Please explain any technical terms or discipline-specific phrases.

Background and rationale

The SCERTS model is a comprehensive educational assessment and intervention approach for children with autism spectrum disorders (ASD). The name 'SCERTS' comes from the three core domains of the approach: Social Communication, Emotional Regulation, and Transactional Support. A shire county educational psychology service (EPS) recently trained all educational psychologists in the service in the SCERTS approach, along with a number of staff from linked agencies. The service invested in the model as continued professional development for staff, and in response to the number of tribunals relating to costly interventions. Whilst current research supports the efficacy of the SCERTS approach, there is a gap in understanding the impact of the approach on professional practice. Consequently, I am interested in understanding the practical impact of receiving training in, and applying in practice, the SCERTS model, on educational psychology practice. This will provide a comprehensive understanding of the impact SCERTS in practice, as well as understanding the benefits and limitations of utilising the SCERTS model in an EPS.

Research Questions:

1. How is the SCERTS model used?
    - When, why, how: e.g. ages; diagnoses; developmental stage; full/brief assessment; regularity of reviews; tribunals; understanding the child; empowerment/knowing how to support the child;
    - When and why is it not used?

2. What effect has the SCERTS model had on educational psychology practice?
   e.g. Impact on multidisciplinary working; Confidence with different types of work (statutory work, traded work, tribunals); Changes in use of alternative assessments; Other impacts.

Expected Outcomes

It is anticipated that there will be variation with how the SCERTS model is currently being used in practice. However, the information collected will provide understanding of what is currently working well, and what is more difficult to implement.

The authors of the SCERTS model suggest that the approach encourages and improves multidisciplinary working. In addition, there has been recent research providing a small amount of evidence towards this claim. It is expected, therefore, that the proposed research will provide further evidence towards this. It is also expected that receiving comprehensive training in the SCERTS approach will have further impacts on educational psychology working, such as: improved confidence in working, and greater understanding of the child.

7. CONDUCT OF PROJECT

Please give a description of the research methodology that will be used

To investigate the use and impact of the SCERTS model within an EPS, I will adopt a pragmatic research paradigm in order for the findings of the research to be practical and useful in advancing educational psychology practice. The pragmatic approach will employ mixed methods to fully understand the SCERTS model in practice and the impact it has had within the educational psychology service. In addition, quantitative and qualitative methodologies have their own strengths and limitations, and by combining these the limitations of the research are reduced.

Methods:
Pilot: focus group with a small number of staff members (3-5) to pilot framework of questions for the research – please see appendix 3 for example of questionnaire.
Full research: Initial online consent form and questionnaire (via email) for understanding when the SCERTS model is used, and for how it is used. This to go to all educational psychologists in the service. Option to partake in further focus group/interviews.
Focus group/semi-structured interviews (dependent on numbers of participants) for further depth (qualitative information) relating to when and how the SCERTS approach used, as well as fully exploring the impact on practice. Focus groups/Interviews will be audio recorded and transcribed for data analysis. Please see appendix 4 for example of interview schedule.

Analysis:
Quantitative questionnaire data reported and used in development of framework for qualitative data collection. Framework or template analysis for analysing the data collected through semi-structured interviews and/or focus groups.

8. DOES THE PROJECT INVOLVE PARTICIPATION OF PEOPLE OTHER THAN THE RESEARCHERS AND SUPERVISORS?

Yes ☒ No ☐

Note: 'Participation' includes both active participation (such as when participants take part in an interview) and cases where participants take part in the study without their knowledge and consent at the time (for example, in crowd behaviour research).

If you have answered NO please go to Section 18. If you have answered YES to this question please complete all the following sections.

9. PARTICIPANTS AS THE SUBJECTS OF THE RESEARCH

Describe the number of participants and important characteristics (such as age, gender, location, affiliation, level of fitness, intellectual ability etc.). Specify any inclusion/exclusion criteria to be used.

There are approximately 35 educational psychologists in the identified service, all of whom have been trained in the SCERTS approach (excluding any newcomers to the service since the latest training course was held – July 2017). All educational psychologists (including trainees) will be invited to take part in the research. The following inclusion and exclusion criteria are to be applied to the present study:

Inclusion Criteria
- Participants must be a qualified educational psychologist OR a trainee educational psychologist.
- Participants must have attended an initial two-day training course in the SCERTS approach.
- Participants must be employed by, on placement with, or commissioned by, the identified Shire County Educational Psychology Service.

Exclusion Criteria:
- Educational psychologists or trainee educational psychologists who have not attended SCERTS training.

Participants do not need to have formally used the SCERTS model in practice to take part in the study for the following reasons: 1. training may have had an indirect impact on practice; 2. the reasons why it has not been used may provide knowledge and understanding of limitations of the approach.

10. RECRUITMENT

Please state clearly how the participants will be identified, approached and recruited. Include any relationship between the investigator(s) and participant(s) (e.g. instructor-student).

Note: Attach a copy of any poster(s), advertisement(s) or letter(s) to be used for recruitment.

All educational psychologists in the identified service have been trained in the SCERTS approach (excluding any newcomers to the service since the latest training course was held – July 2017). The research will be raised during service team meetings, and all educational psychologists (including trainees) will then be invited to take part in the research through email. In this email it will be stated that taking part in the research is the participant's own decision, it is not compulsory to take part, and they have the right to withdraw at any time during the study (British Psychological Society ethical guidelines, 2009). Information sheets (appendix 1a and 1b) and consent forms (appendix 2) will also be circulated via email.

The researcher is currently on placement with the identified service, therefore the participants will all be colleagues of the investigator. The investigator's placement supervisor, line manager, and the principal educational psychologist (service lead) are all staff employed by the identified service, and therefore, will all be invited to take part. If these staff members decide to take part in the research, these staff members will have an additional supervisory/managerial relationship with the investigator.

11. CONSENT

a) Describe the process that the investigator(s) will be using to obtain valid consent. If consent is not to be obtained explain why. If the participants are minors or for other reasons are not competent to consent, describe the proposed alternate source of consent, including any permission / information letter to be provided to the person(s) providing the consent.

Initially consent will be gained from the Principal Educational Psychologist for research to take place in the service. Educational psychologists and trainees who would like to take part in the research will be asked to provide written consent (appendix 2) after reading written information about the research project (appendix 1a and 1b) and having been given the opportunity to discuss concerns or questions about the research. The information sheet will outline expectations of participation, voluntary informed consent, the right to withdraw, confidentiality procedures (as outlined by the BPS Code of Ethical Conduct 2009) and audio recording and data storage procedures. The consent form will ask participants if they have understood the research information and whether they give their consent to participate.

Note: Attach a copy of the Participant Information Sheet (if applicable), the Consent Form (if applicable), the content of any telephone script (if applicable) and any other material that will be used in the consent process.

b) Will the participants be deceived in any way about the purpose of the study? **Yes** ☐ **No** ☒

If yes, please describe the nature and extent of the deception involved. Include how and when the deception will be revealed, and who will administer this feedback.

N/A

12. PARTICIPANT FEEDBACK

Explain what feedback/ information will be provided to the participants after participation in the research. (For example, a more complete description of the purpose of the research, or access to the results of the research).

Participants who take part in the research will receive a summary of the key findings from the research once data has been analysed. The service lead will also receive a written summary report of the findings for the benefit of the service, whether or not the service lead participated in the research.

13. PARTICIPANT WITHDRAWAL

a) Describe how the participants will be informed of their right to withdraw from the project.

Written information will be given to participants prior to them consenting to take part, informing them of their right to withdraw. This will be explicitly stated in the information sheet and on the consent form. Participants will be reminded of their right to withdraw at the beginning of any interviews or focus groups. Participants will be free to withdraw at any time prior to, during, or after the data collection. Withdrawal time after the data collection takes place will be limited to a maximum of one week after participation as after this time data analysis will have commenced and it will be logistically difficult to remove participants' data from the analysis process. Participants will be informed of this time limit in the information sheet and consent forms.

b) Explain any consequences for the participant of withdrawing from the study and indicate what will be done with the participant's data if they withdraw.

There will be no consequences for participants (in either the pilot of full research study) if they wish to withdraw from the research study.

If participants wish to withdraw during or up to one week after the data collection, their data will be identified, the transcript will be destroyed and audio-recording erased from storage devices. This data will not be included in the data analysis.

14. COMPENSATION

Will participants receive compensation for participation?

i) Financial — **Yes** ☐ **No** ☒

ii) Non-financial — **Yes** ☐ **No** ☒

If **Yes** to **either** i) or ii) above, please provide details.

N/A

If participants choose to withdraw, how will you deal with compensation?

N/A

15. CONFIDENTIALITY

a) Will all participants be anonymous? Yes ☐ No ☒

b) Will all data be treated as confidential? Yes ☒ No ☐

Note: Participants' identity/data will be confidential if an assigned ID code or number is used, but it will not be anonymous. Anonymous data cannot be traced back to an individual participant.

Describe the procedures to be used to ensure anonymity of participants and/or confidentiality of data both during the conduct of the research and in the release of its findings.

The service involved in the research will not be named, and will be referred to as 'a shire county educational psychology service' to ensure confidentiality of the service. All participants will be allocated a participant number to ensure confidentiality, but to allow data to be tracked within participant. Audio recordings and transcriptions of the focus groups/interviews will be labelled with participant numbers. Participants will be reminded not to mention names of services/schools/children/families/colleagues, however, if any names are expressed during recording, pseudonyms will be used in transcription. The audio-recording will be listened to and transcribed by the researcher only. The audio recording will not be accessible to anyone other than the researcher. Participants will be informed that their responses will be shared collectively in a research paper and summary report.

If participant anonymity or confidentiality is not appropriate to this research project, explain, providing details of how all participants will be advised of the fact that data will not be anonymous or confidential.

The limits to confidentiality are where there may be risk to the participant or other individuals not involved in the research. Participants will be made aware of this before giving their consent. If anything is raised relating to harm or potential harm to participants or others, the Local Authority's policies on confidentiality and safeguarding will be adhered to (BPS ethical guidelines, 2009).

If individual differences are of note, patterns and extraneous factors can then be analysed in more depth tracing the data back to an individual participant through their number. Participants will be advised of this before consenting to partake.

16. STORAGE, ACCESS AND DISPOSAL OF DATA

Describe what research data will be stored, where, for what period of time, the measures that will be put in place to ensure security of the data, who will have access to the data, and the method and timing of disposal of the data.

All data will be kept and stored in accordance with the Data Protection Act (1998, modified 2003).

Focus groups/interviews will be recorded using a password protected audio-recording device. After the focus group/interview, audio-recorded data will be moved to an encrypted USB storage device that only the researcher has access to. The audio files will then be deleted from the audio-recorder. Written transcripts will also be stored on the encrypted USB file. Participant names will only be included on consent forms and the participant number database, both of which will be held electronically on the encrypted USB.

In line with university ethical guidelines, all data will be kept for 10 years on an encrypted USB device, during which time the researcher, supervisors and any university examiners may have access to it. After this time, all electronic data will be erased.

17. OTHER APPROVALS REQUIRED? e.g. Criminal Records Bureau (CRB) checks or NHS R&D approvals.

☐ YES ☒ NO ☐ NOT APPLICABLE

If yes, please specify.

N/A

18. SIGNIFICANCE/BENEFITS

Outline the potential significance and/or benefits of the research

The proposed study will provide a unique insight in to the impact of applied use of the SCERTS model within educational psychology practice. The study will explore and report the benefits of utilising the approach in educational psychology practice, along with the limitations, and practical impact of the approach. This may provide information for services potentially investing in the training, and may also provide information to the participating service in order to respond to any suggested limitations to improve practice. In addition, the knowledge gained from the research will add to the SCERTS model evidence base, and may inform future developments of the model.

19. RISKS

a) Outline any potential risks to **INDIVIDUALS**, including research staff, research participants, other individuals not involved in the research and the measures that will be taken to minimise any risks and the procedures to be adopted in the event of mishap

Focus groups/interviews will be conducted in on the service's premises during normal working hours. It is not anticipated that there will be any physical or emotional risks to the researcher, research participants, or other individuals not involved in the research.

b) Outline any potential risks to **THE ENVIRONMENT and/or SOCIETY** and the measures that will be taken to minimise any risks and the procedures to be adopted in the event of mishap.

It is not anticipated that there will be any risks to the environment and/or society as a result of this research.

20. ARE THERE ANY OTHER ETHICAL ISSUES RAISED BY THE RESEARCH?

Yes ☐ **No** ☒

If yes, please specify

N/A

21. EXPERT REVIEWER/OPINION

You may be asked to nominate an expert reviewer for certain types of project, including those of an interventional nature or those involving significant risks. If you anticipate that this may apply to your work and you would like to nominate an expert reviewer at this stage, please provide details below.

Name
Contact details (including email address)
Brief explanation of reasons for nominating and/or nominee's suitability

22. CHECKLIST

Please mark if the study involves any of the following:

- Vulnerable groups, such as children and young people aged under 18 years, those with learning disability, or cognitive impairments ☐
- Research that induces or results in or causes anxiety, stress, pain or physical discomfort, or poses a risk of harm to participants (which is more than is expected from everyday life) ☐
- Risk to the personal safety of the researcher ☐
- Deception or research that is conducted without full and informed consent of the participants at time study is carried out ☐
- Administration of a chemical agent or vaccines or other substances (including vitamins or food substances) to human participants. ☐
- Production and/or use of genetically modified plants or microbes ☐
- Results that may have an adverse impact on the environment or food safety ☐
- Results that may be used to develop chemical or biological weapons ☐

Please check that the following documents are attached to your application.

	ATTACHED	NOT APPLICABLE
Recruitment advertisement	☐	☒
Participant information sheet	☒	☐
Consent form	☒	☐
Questionnaire	☒	☐
Interview Schedule	☒	☐

23. DECLARATION BY APPLICANTS

I submit this application on the basis that the information it contains is confidential and will be used by the University of Birmingham for the purposes of ethical review and monitoring of the research project described herein, and to satisfy reporting requirements to regulatory bodies. The information will not be used for any other purpose without my prior consent.

I declare that:

- The information in this form together with any accompanying information is complete and correct to the best of my knowledge and belief and I take full responsibility for it.
- I undertake to abide by University Code of Practice for Research (http://www.as.bham.ac.uk/legislation/docs/COP_Research.pdf) alongside any other relevant professional bodies' codes of conduct and/or ethical guidelines.
- I will report any changes affecting the ethical aspects of the project to the University of Birmingham Research Ethics Officer.
- I will report any adverse or unforeseen events which occur to the relevant Ethics Committee via the University of Birmingham Research Ethics Officer.

Name of principal investigator/project supervisor:	Julia Howe
Date:	09.01.2018

Please now save your completed form, print a copy for your records, and then email a copy to the Research Ethics Officer, at aer-ethics@contacts.bham.ac.uk. As noted above, please do not submit a paper copy.

Appendix 9: Four key areas explored during the focus groups

SCERTS focus groups
EPS meeting 18th July 2018

Instructions:
The overarching theme of the focus groups is to find out: "what effect the SCERTS model has had on your practice as an educational psychologist"

Facilitator to prompt as appropriate.

Initial thoughts:

- After first finding out about the SCERTS approach (either attending formal training or through informal reading/self-teaching) what excited you most about the approach? Keep this brief if possible: 5-10 mins max.

Use of SCERTS:

- Discuss your perception of the advantages and disadvantages of the SCERTS approach in your practice. 15 mins.
- Discuss the different ways in which you have used SCERTS in your practice – share what you have found works well and what worked less well. 15 mins.

Multidisciplinary working:

- *How* has learning about SCERTS changed the way you work with colleagues, from any background, including other EPs and other disciplines? 15 mins.

Other Impacts:

- What are your reflections on the whole-team training approach (as experienced by this service), along with other professional (e.g. STS, SALT, OT, some schools etc), as opposed to training one/two SCERTS specialists for the team? 15 mins.
- *If time: (Thinking more broadly, what other impacts do you think there have been on your practice since learning about SCERTS, either individually, or as a team?)*

Appendix 10: Phase one information sheet

Information Sheet – SCERTS Questionnaires
Page 1

Research Title

This research is called 'SCERTS: An Exploration of Educational Psychology Practice'

You are being invited to take part in this research project. Before you decide to take part, it is important for you to understand why the research is being done, and what taking part will involve. Please take time to read the following information, and contact Rosie Knight if you wish to discuss anything or have further questions.

Project purpose

This research aims to investigate the impact of receiving training in the SCERTS model. The research will explore when, why, and how it is currently being used by educational psychologists. You do not need to have directly used the SCERTS model to take part in the research, as it is also looking at why it is not used. The research is also aimed at understanding the practical impact of the SCERTS model on your practice as an educational psychologist. Whilst there is a vast evidence base suggesting SCERTS is a beneficial assessment and intervention approach, there is limited understanding relating to the practicalities of how this translates in to day-to-day working. This research aims to bridge this gap.

Who can take part?

Any educational psychologist (including trainees and assistants) employed by, or working with, the service who has received training in the SCERTS model can take part in this research. You are welcome to take part in the research whether or not you have drawn on the SCERTS approach in your practice.

Do I have to take part?

It is your decision whether to take part in the research – you are under no obligation to take part. The researchers will not share whether or not you have taken part in this research with anyone. If you do decide to take part, you will be able to keep a copy of this information sheet to refer back to, and you will be asked to provide consent to participate. You are able to withdraw, without giving a reason, at any time during the research. Once you have submitted your responses you cannot withdraw as your data will not be able to be traced back to you.

What does it involve?

You will be asked to complete an online questionnaire which will gather information about how you have, or have not, used SCERTS in your practice. This questionnaire should take no longer than 15 minutes.

What are the benefits of taking part?

It is hoped that, through willing participation of educational psychologists, this research will provide knowledge and understanding regarding the impact of the SCERTS model on practice. The information gathered may be used by the service to reduce any current limitations posed by the SCERTS approach, and to inform this, and other services, on the benefits of using the approach.

Information Sheet – SCERTS Questionnaires
Page 2

Confidentiality

All the information collected during the research will be anonymous. You will not be able to be identified in any reports, and any data collected will be stored on encrypted software to ensure security and confidentiality of your data. Information collected in this research will be presented in a written report, however, will be anonymous to ensure the information cannot be traced back to any individual.

How will my information be recorded?

The information gathered on the online questionnaire will be kept in an electronically written format on an encrypted device. The information will be held securely on an encrypted device for ten years to comply with university ethical guidelines. After this period the data will be erased.

What will happen after the project?

You will receive a short report outlining the findings of the research. The research will also be written up for the purposes of the researcher's doctoral thesis, and findings may be published. You will not be identifiable in any reports or publications.

Who is organising this research?

This research is organised by Rosie Knight, Trainee Educational Psychologist, as part of her doctoral thesis at the University of Birmingham. The research is being supervised by Dr Julia Howe, Academic and Professional Tutor in the School of Education at the University of Birmingham.

How to complain

If you are unhappy with the project in any way, you can contact the researcher to discuss your concerns or complaints. If you would like to escalate a complaint, please contact Dr Julia Howe – contact details below.

Contacts for further information

Rosie Knight

Trainee Educational Psychologist

RXK625@student.bham.ac.uk

[redacted]

Dr Julia Howe

Academic and Professional Tutor / Educational Psychologist

[redacted]

Appendix 11: Phase two information sheet

Information Sheet – Focus Groups
Page 1

Research Title

This research is called 'SCERTS: An Exploration of Educational Psychology Practice'

Thank you for taking part in this research project. You are now being invited to take part in the second stage of information gathering for this study. Please take time to read the following information, and contact Rosie Knight if you wish to discuss anything or have further questions.

Project purpose

This research aims to investigate the impact of receiving training in the SCERTS model. The research will explore when, why, and how it is currently being used by educational psychologists. You do not need to have directly used the SCERTS model to take part in the research, as it is also looking at why is not used. The research is also aimed at understanding the practical impact of the SCERTS model on your practice as an educational psychologist. Whilst there is a vast evidence base suggesting SCERTS is a beneficial assessment and intervention approach, there is limited understanding relating to the practicalities of how this translates in to day-to-day working. This research aims to bridge this gap.

Who can take part?

Any educational psychologist (including trainees and assistants) employed by, or working with, the service who has received training in the SCERTS model can take part in this research. You are welcome to take part in the research whether or not you have drawn on the SCERTS approach in your practice.

Do I have to take part?

It is your decision whether to take part in the research – you are under no obligation to take part. The researchers will not share whether or not you have taken part in this research with anyone. If you do decide to take part, you will be able to keep a copy of this information sheet to refer back to, and you will be asked to provide consent to participate. You are able to withdraw, without giving a reason, at any time during the research, and for up to a week after taking part. After this time data analysis may have begun and it may then be difficult to remove data.

What does it involve?

This part of the research involves taking part in a focus group to find out more about how you have/have not used SCERTS, and to find out more about the impact of training in the SCERTS approach on your practice.

All participants taking part in a focus group will be colleagues within the Educational Psychology Service. All participants taking part in a focus group should agree to treat any comments and discussions as confidential. Any focus groups will be completed during work hours at a convenient location for you. This may be following team meetings to reduce the impact on your workload and should take approximately one hour.

What are the benefits of taking part?

It is hoped that, through willing participation of educational psychologists, this research will provide knowledge and understanding regarding the impact of the SCERTS model on practice. The information gathered may be used by the service to reduce any current limitations posed by the SCERTS approach, and to inform this, and other services, on the benefits of using the approach.

What are the disadvantages and risks of taking part?

There are no other commitments or restrictions associated with taking part. It is not anticipated that taking part will cause you any disadvantages or put you at any physical or emotional risk.

Confidentiality

All the information collected during the research will be kept strictly confidential. You will not be able to be identified in any reports, and any data collected will be stored on encrypted software to ensure security and confidentiality of your data. If you decide to take part, you will be allocated a participant number to ensure confidentiality of your data, whilst allowing the researcher to investigate trends in data within individual participants' responses. A database will be held separate to the data collected to identify your participant number in the case that you wish to withdraw your data.

Information collected in this research will be presented in a written report, however, will be anonymised to ensure the information cannot be traced back to an individual.

How will my information be recorded?

The focus groups will be recorded using a password-protected voice recorder and transcribed in to a written format as soon as possible following the recording. The voice recordings will then be deleted. The transcribed information will then be held securely on an encrypted device for ten years to comply with university ethical guidelines. After this period the data will be erased. The information gathered will only use participant numbers, and not participant names, and therefore will remain confidential.

What will happen after the project?

You will receive a short report outlining the findings of the research. The research will also be written up for the purposes of the researcher's doctoral thesis, and findings may be published. You will not be identifiable in any reports or publications.

Who is organising this research?

This research is organised by Rosie Knight, Trainee Educational Psychologist, as part of her doctoral thesis at the University of Birmingham. The research is being supervised by Dr Julia Howe, Academic and Professional Tutor in the School of Education at the University of Birmingham.

How to complain

If you are unhappy with the project in any way, you can contact the researcher to discuss your concerns or complaints. If you would like to escalate a complaint, please contact Dr Julia Howe – contact details below.

Contacts for further information

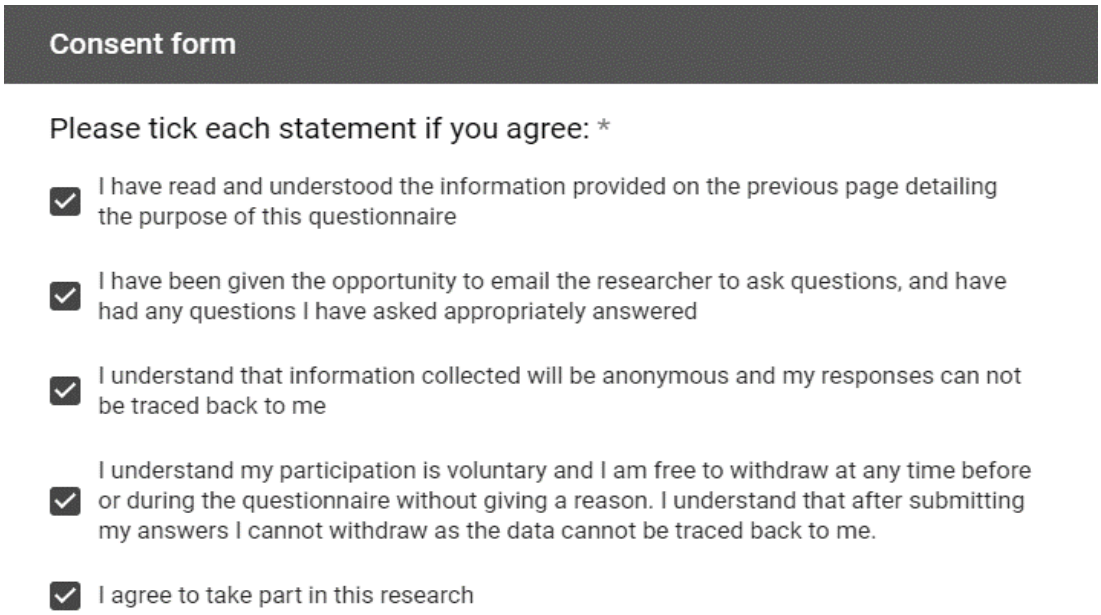
Rosie Knight, Trainee Educational Psychologist
[redacted]

Dr Julia Howe, Academic and Professional Tutor / Educational Psychologist
[redacted]

Thank you for taking the time to read this information sheet and for considering your participation in this research.

Appendix 12: Consent forms

Phase One:

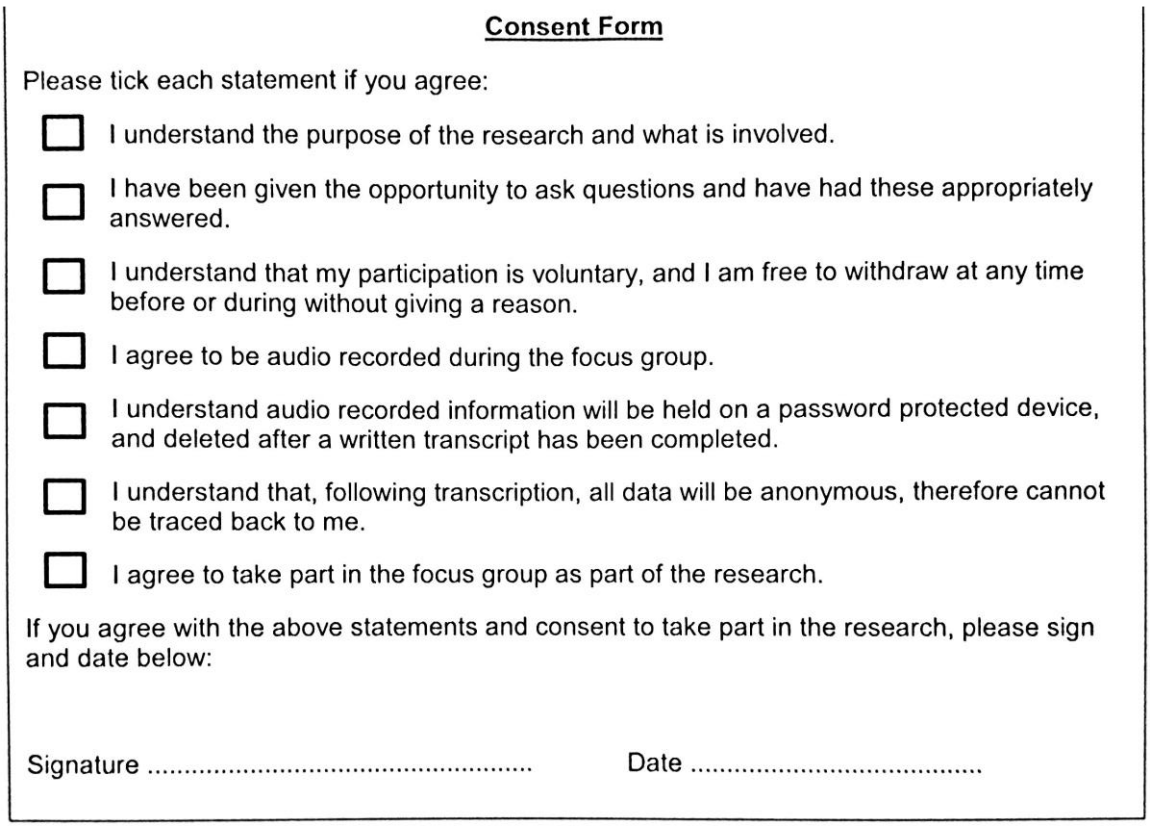


Consent form

Please tick each statement if you agree: *

- [x] I have read and understood the information provided on the previous page detailing the purpose of this questionnaire
- [x] I have been given the opportunity to email the researcher to ask questions, and have had any questions I have asked appropriately answered
- [x] I understand that information collected will be anonymous and my responses can not be traced back to me
- [x] I understand my participation is voluntary and I am free to withdraw at any time before or during the questionnaire without giving a reason. I understand that after submitting my answers I cannot withdraw as the data cannot be traced back to me.
- [x] I agree to take part in this research

Phase Two:



Consent Form

Please tick each statement if you agree:

- ☐ I understand the purpose of the research and what is involved.
- ☐ I have been given the opportunity to ask questions and have had these appropriately answered.
- ☐ I understand that my participation is voluntary, and I am free to withdraw at any time before or during without giving a reason.
- ☐ I agree to be audio recorded during the focus group.
- ☐ I understand audio recorded information will be held on a password protected device, and deleted after a written transcript has been completed.
- ☐ I understand that, following transcription, all data will be anonymous, therefore cannot be traced back to me.
- ☐ I agree to take part in the focus group as part of the research.

If you agree with the above statements and consent to take part in the research, please sign and date below:

Signature ..... Date .....

Appendix 13: Example of the Thematic Analysis Procedure

Initial nodes developed from familiarisation of the transcripts and interview schedule:

Main themes	Subthemes
Initial Thoughts	N/A
Use of SCERTS:	Approaches
	Advantages
	Disadvantages
Collaborative Working	N/A
Impacts:	Service-wide Training

Potential new themes arising from first focus group coding:

After coding the first transcription, I went back through the nodes and added subcategories to refine the broader nodes which held large amounts of data, and added new nodes where data did not fit existing nodes.

Potential new themes arising during coding of the first focus group transcript:	Decisions made:
New theme: o Tribunals	Sufficient content to create a new theme and considered beneficial to the organisation of the data. ***Theme added after the first transcription***
Subtheme under 'Use of SCERTS': o Opportunities for complex children.	Overlaps with potential new theme under 'Impacts'. ***Theme not added***
Subtheme under 'Use of SCERTS': o Understanding of child.	Overlaps with potential new theme under 'Impacts'. ***Theme not added***
Subthemes under 'Use of SCERTS': o Benefits of SCERTS in practice o Barriers to SCERTS in practice	Sufficient content to create a new theme and considered beneficial to the organisation of the data. ***Themes added after the first transcription***
Subtheme under 'Impacts': o Knowledge and understanding of the child	Sufficient content to create a new theme and considered beneficial to the organisation of the data. ***Theme added after the first transcription***

Subtheme under 'Impacts': ○ Confidence	Sufficient content to create a new theme and considered beneficial to the organisation of the data. ***Theme added after the first transcription***
Subtheme under 'Impacts': ○ Understanding the child and progress	Sufficient content to create a new theme and considered beneficial to the organisation of the data. ***Theme added after the first transcription***
Subtheme under 'Impacts': ○ Professional development	Data overlapped with the two other new nodes: 'confidence' and 'understanding the child and progress'. Therefore, I felt this theme was not necessary in organising the data. ***Theme not added***
Subthemes under 'approaches': ○ Consultation ○ Observation ○ SCERTS in Action ○ SCERTS Assessment Process ○ Report Writing	Considered beneficial to the organisation of the data. ***Themes added after the first transcription***

Following the coding of all three transcriptions, I revisited each node and created sub-nodes for those holding large amounts of data. The data held under the 'Initial Thoughts' and 'Impacts' nodes were redistributed to more appropriate nodes to improve flow and reduce overlap in coding. The final nodes are outlined below:

Node	**Sub-nodes**
Approaches	○ Consultation ○ Observation ○ SCERTS in Action ○ SCERTS Assessment Process ○ Report Writing
Advantages of SCERTS	○ Collaboration and Shared Understanding ○ Flexible Use ○ Comprehensive Evidence Based Developmental Model
Disadvantages of SCERTS	○ Time ○ Language ○ Complexity
Benefits in Practice	○ Reflection ○ Strengths Based Approach ○ Comprehensive Understanding and Targets ○ Theoretical Understanding of ASD
Barriers in Practice	○ Time ○ Language ○ Wider Understanding of SCERTS ○ Inconsistent Use ○ Secondary Schools

Collaborative Working	○ Shared Understanding ○ Professional Relationships ○ Practicalities
Tribunals	No subnodes.
Service-wide Training	No subnodes.

Following the addition of the new sub-nodes and the absorption of two existing nodes, I revisited each node to further organise the data and ensure appropriateness of coding.

Appendix 14: Tables of results

Questionnaire data:

Professional Status	Number of EPs	Percentage of EPs
Senior/Principal EP	3	15%
EP	12	60%
Assistant/Trainee EP	4	20%
No response	1	5%
Total	20	100%

Table 1. Professional status of respondents

Training	Number of EPs	Percentage of EPs
Formal 3-day training	1	5%
Formal 2-day training	17	85%
Formal 1-day training	1	5%
Brief introductory training	1	5%
Total	20	100%

Table 2. Training type

Training date	Number	Percentage
6 months – 1 year ago	7	35%
Over 1 year ago	12	60%
No response	1	5%
Total	20	100%

Table 3. Training recency

Usage	Number of respondents	Percentage of respondents
Full SCERTS Assessment Process (SAP)	4	20%
SCERTS in Action (SIA)	8	40%
Observation tools	17	85%
Information gathering questionnaires	12	60%
Theory to guide formulation	12	60%
Principles in practice	13	65%
Referencing principles in consultation	8	40%
In training others	0	0%
As a recommended action	9	45%
Other	1	5%
Not Used	0	0%

Table 4. EP use of the SCERTS approach in practice

Regularity	Number of EPs	Percentage of EPs
At least once a week	2	10%
Every couple of weeks	3	15%
At least once a month	2	10%
Every couple of months	8	40%
Approximately every 6 months	2	10%
Approximately once a year	1	5%
Less than once a year	1	5%
Not used	1	5%

Table 5. Regularity of EP use of the SCERTS approach in practice

Number of reviews	Number of EPs	Percentage
0	12	60%
1-3	7	35%
4-10	1	5%
10+	0	0%

Table 6. Number of cases reviewed

Regularity of reviews	Number of EPs	Percentage overall	Percentage of EPs who have conducted reviews
Weekly	0	0%	0%
Monthly	0	0%	0%
Half-termly	1	5%	12.5%
Termly	2	10%	25%
Every other term	1	5%	12.5%
Annually	2	10%	25%
Not applicable/unsure	14	70%	25%

Table 7. Regularity of reviews.

Type of work when SCERTS was used	Number of EPs	Percentage
Traded	15	75%
Statutory (as part of an EHCNA)	14	70%
Potential Tribunal	6	30%
Tribunal	2	10%
Other	1	5%

Table 8. Funding streams/type of work when the SCERTS approach has been used

	Statutory / EHCNA work	Traded work	Tribunal work	Other	I would not like to use it	No response
SAP	6	8	10	3	0	6
SIA	12	15	9	6	0	2
Observational tools	12	16	8	9	0	2
Other elements	6	11	5	8	0	1

Table 9.a. Number of EPs reporting each type of work where they would consider using elements of the SCERTS approach in future practice

	Statutory / EHCNA work	Traded work	Tribunal work	Other	I would not like to use it	No response
SAP	30%	40%	50%	15%	0%	30%
SIA	60%	75%	45%	30%	0%	10%
Observational tools	60%	80%	40%	45%	0%	10%
Other elements	30%	55%	25%	40%	0%	5%

Table 9.b. Percentage of EPs reporting each type of work where they would consider using elements of the SCERTS approach in future practice

Profession	Number of EPs collaborating with this profession	Percentage of EPs
Speech and Language Therapist	7	35%
Occupational Therapist	0	0%
Specialist Teacher	1	5%
Early Years Professional	7	35%
School-based Teacher	6	30%
Another EP	10	50%
None	2	10%

Table 10. Collaboration across professional disciplines when using the SCERTS approach

Age of Child	Number of EPs using SCERTS with this age group	Percentage of EPs using SCERTS with this age group
0-2 years	2	10%
3-5 years	16	80%
6-8 years	10	50%
9-11 years	8	40%
12-14 years	3	15%
15-17 years	2	10%
18+ years	0	0%

Table 11. Age of children with whom the responding EPs have used the SCERTS approach with

Diagnoses	Number	Percentage
Autism	18	90%
Social Communication Difficulties	11	55%
Speech and Language Difficulties	5	25%
Semantic Pragmatic Disorder	0	0%
Attachment Needs	0	0%
Learning Disability	3	15%
Other	0	0%
None	0	0%

Table 12. Child needs when using the SCERTS approach

Number of children	Number of EPs using SCERTS at the Social Partner stage	Percentage of EPs using SCERTS at the Social Partner stage
0 children	1	5%
1-3 children	11	55%
4-10 children	1	5%
10+ children	0	0%
No response	7	35%
Total	20	100%

Table 13a. EP use of the SCERTS approach at the Social Partner Stage

Number of children	Number of EPs using SCERTS at the Language Partner stage	Percentage of EPs using SCERTS at the Language Partner stage
0 children	0	0%
1-3 children	12	60%
4-10 children	2	10%
10+ children	0	0%
No response	6	30%
Total	20	100%

Table 13b. EP use of the SCERTS approach at the Language Partner Stage

Number of children	Number of EPs using SCERTS at the Conversational Partner stage	Percentage of EPs using SCERTS at the Conversational Partner stage
0 children	2	10%
1-3 children	9	45%
4-10 children	1	5%
10+ children	0	0%
No response	8	40%
Total	20	100%

Table 13c. EP use of the SCERTS approach at the Conversational Partner Stage

Developmental Stage	Number of EPs reporting using the approach with at least one child	Percentage of EPs reporting using the approach with at least one child
Social Partner	12	33%
Language Partner	14	39%
Conversational Partner	10	28%

Table 13d. EP use of the SCERTS approach at each developmental stage with at least one child

Understanding of the child's needs, compared to other approaches	Number	Percentage
More comprehensive understanding than other approaches typically used	10	50%
Similar level of understanding to other approaches typically used	6	30%
Less comprehensive understanding than other approaches typically used	2	10%
Not sure	2	10%

Table 14. EP level of understanding regarding the child's needs when using the SCERTS approach, compared with other approaches typically used

Confidence in choice of intervention/support following assessment, compared to other approaches	Number	Percentage
More confident than other approaches typically used	12	60%
About the same level of confidence to other approaches typically used	4	20%
Less confident than other approaches typically used	2	10%
Not sure	2	10%

Table 15a. EP level of confidence regarding recommendations after using the SCERTS approach, compared with other approaches typically used

	Reason
More	As I had not completed the SCERTS assessment myself (as I had not received the training at this point), I felt much greater confidence in providing recommendations and suggested interventions and provision to school staff due to the evidence base which SCERTS is based on, and understanding that the outcomes suggested were based on the assessment. Furthermore, knowing that the two colleagues who had completed the SCERTS assessment had worked on it together collaboratively, I felt greater confidence that I was not adding the view of another professionals view to the 'formulation', and rather was taking the information gained from the assessment to inform provision, strategies and intervention.
More	The observational tool did provide a framework to guide my thinking; particularly in consultation with the teacher to explore what the purpose of the activity was for the young person
Unsure	It can be difficult to see how the SCERTS assessment translates into practical actions
More	The SCERTS model gives clear next step targets that you can use to help support the child's development.
Less	i do not feel supported in clarifying my findings and feel that I would benefit from further support and training
More	Very detailed guidance for the use of assessment, working with another professional, replicated across time.
More	SCERTS offers a cohesive, pragmatic approach to complex needs. It provides you with a clear rationale to why you make certain recommendations.
More	It provided a structured and systematic way to complete observations and consider next steps.
Unsure	I have not used SCERTS enough.
More	SCERTs provides a clear, evidence based framework, with responses/intervention linked directly to the presenting needs
Same	Similar level of confidence to other tools I have used, given that I have a high level of supervisory support for all my work, given that I am a trainee.
More	Interventions and support are drawn directly from the SCERTS manual, therefore can confidently be defended in a Tribunal.
More	The very structured stages helped me feel more confident in identifying next steps and also made it very clear gaps in child's skills.
More	The assessment process felt more thorough; this made me feel more knowledgeable about the child's skills; the breakdown of skills and developmental stages involved in SCERTS helped me feel like I was making recommendations that were in the zone of proximal development for this child, were appropriate next steps for development and would be the optimal skills to develop in order to boost functional communication and interaction.
Less	I feel as though SCERTS is still a very new framework for me and it had been some time since my training and the attempt to draw upon the framework/ approach in my work.
More	The psychological / neuro psychological principles underpinning the SCERTS approach

Table 15b. EP reasons relating to levels of confidence regarding recommendations after using the SCERTS approach

Confidence in using the approach in the future	Number	Percentage
Confident	3	15%
Somewhat confident	9	45%
Somewhat apprehensive	4	20%
Apprehensive	2	10%
Other/No response	2	10%

Table 16. EP confidence levels in applying the approach in the future

Barriers	Number of EPs	Percentage of EPs
Time constraints	17	85%
Difficulties working with other professionals	9	45%
Confidence	7	35%
Not appropriate for the child	2	10%
Limited understanding of the approach	5	25%
Colleague/Managerial support	0	0%
Other	1	5%

Table 17a. Perceived barriers to using the SCERTS approach in EP practice

Description of 'Other' barrier to use of the SCERTS approach in EP practice	Reassigned category
Although I understand how to do it; not feeling fluent in how to conduct it is a challenge as it takes a long time to get your head around the full SCERTS assessment.	Time constraints.
Once I have done more full assessments I am sure I will use it more. As it is a new approach it takes time to be confident in delivering it.	Confidence.
Time and difficulties with other professionals when doing the full assessment but there are lots of parts of the SCERTS that you can do by yourself.	Time constraints. Difficulties working with other professionals
Opportunity.	Not appropriate for the child.
I found the full SCERTS assessment hugely time consuming and the time needed would impact on how likely I was to use it again. I find the SCERTS in action really useful and not time consuming so now use this as part of my general work.	Time constraints.
I rarely get casework where I think SCERTS could be really beneficial as opposed to other approaches. It requires a lot of pre-planning time to look over the materials again and seek support from other colleagues. This can be hard to accommodate in busy EP diaries.	Time constraints.
Unfortunately, I was not on placement in the service when the one day training was provided for EPs, hence I am reticent about using the approach and am unsure about how I might use the approach in the future.	Limited understanding of the approach.

Table 17b. Reassignment of 'other' descriptions

Factors to enhance use of SCERTS in practice	Number of EPs	Percentage of EPs
More ideas on how to use SCERTS in limited time scales	12	60%
More ideas on how to use SCERTS in alternative ways	8	40%
More supervisory support	4	20%
More peer support	4	20%
Further training on full SCERTS assessment	2	10%
Further training on SCERTS in Action	3	15%
Further training on the theories underpinning SCERTS	0	0%
Other	2	10%

Table 18. Factors considered potentially enhance the use of SCERTS in EP practice